UNITED STATES DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES

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* Indicates that reports in the BIOS, CIOS and FIAT series are deposited in the Library of Congress Depository Libraries. For a complete list of these libraries, see page facing page 1, volume 5, of this Bibliography.

In addition to the indexes described on the back cover of this Bibliography, the Office of Technical Services has published the following reference works:

PB L 58101-R. SWIFT, GRACE. Government document series, analyzed by Office of Technical Services. Rev. Nov. 1947. 45 p. Price: 25¢.

PB L 78000. LOWRY, W. KENNETH. OSRD reports: Bibliography and index of declassified reports having OSRD numbers. Jun 1947. 105 p. Price: 75¢.

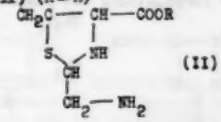
PB L 79322. SWIFT, GRACE and ORNE, JERROLD. Subject headings for technical libraries. Jun 1947. 167 p. Price: $1.50.

PB L 81803. U. S. OFFICE OF TECHNICAL SERVICES, TECHNICAL INDUSTRIAL INTELLIGENCE DIVISION. Reports resulting from the investigation of German technology, 1945-1946, and index of personnel. May 1947. 207 p. Price: $5.25.

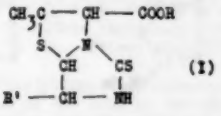
Drugs and Pharmaceuticals

PB L 85412. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Dyson Perrins Laboratory and the Sir William Dunn School of Pathology, Oxford University. Interim report. (British Rept Br 84; Committee on Penicillin Synthesis Rept 198). Jul 1944. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
A brief account of some derivatives made in the course of the work at Oxford University.

PB L 79849. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Further experiments in the thiazolidine series. By R. Bentley and others. (British Rept Br 155; Committee on Penicillin Synthesis Rept 430). Mar 1945. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
A study of the esters formed by the action of diazomethane in methanol or the interaction of phosgene on the dihydrochloride of thiazolidine of type (II) (R=H) to form the ester ($R=CH_3$) and also reaction of methanol and carbon disulfide on 2-aminocarboxymethyl-5,5-dimethyl-4-carboxythiazolidine type I ($R'=CH_3$, $R=CO_2CH_3$)



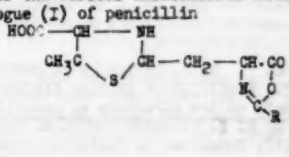
(II)



(I)

Imperial College, London.

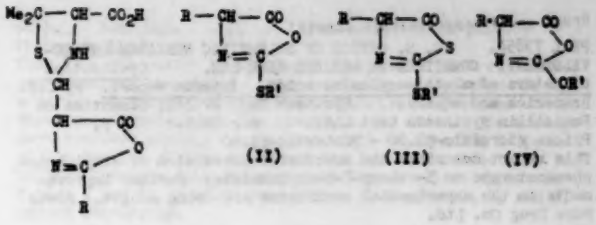
PB L 79850. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Attempts to prepare a homologue of penicillin. Interim report. By W.J.S. Lewar and others. (British Rept Br 156; Committee on Penicillin Synthesis Rept 438). Mar 1945. 3 p.
Price: Microfilm-$1.00 - Photostat-$1.00
A description is given of the various unsuccessful attempts to synthesize the homologue (I) of penicillin



Oxford University.

PB L 79851. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. The structure of penicillin. By R. Robinson. (British Rept Br 157; Committee on Penicillin Synthesis Rept 439). Mar 1945. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
This report deals with the electromeric displacement in the thiazolidine-oxazolone nuclei (formula). The author believes this modified formula serves to interpret the whole of the penicillin chemistry in a completely satisfactory manner.

PB L 79852. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Further experiments in the oxazolone and thiazolone series. By A. H. Cook. (British Rept Br 158; Committee on Penicillin Synthesis Rept 440). Mar 1945. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
Work in progress in the laboratories of the Imperial College includes attempts at several thiazolidine-oxazolone structures modified with respect to the substitution rather than the ring structure. Almost all experiments so far recorded in the penicillin literature have been concerned with the synthesis of (I) where R= a hydrocarbon residue; the present report records the initial steps in the attempted preparation of (I) where R has a different significance and in particular where R=SR'(R'= a hydrocarbon residue). Oxazolones of types (II) of (III) have apparently not previously been prepared, though a few comparable compounds are mentioned here. The parent of all these systems is (IV) (R'= H), i.e. the oxazolidione system.



(I) (II) (III) (IV)

Imperial College.

PB L 79853. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Some derivatives of 2-styryloxazolone. Interim report. By H. R. Bentley. (British Rept Br 159; Committee on Penicillin Synthesis Rept 441). Mar 1945. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00
This report mentions the preparation and reactions of 4-acetyl-2-styryloxazolone. Ultra violet absorption curves are attached. Oxford University.

PB L 79854. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Infra red measurements on the structure of penicillin. By R. E. Richards and H. W. Thompson. (British Rept Br 160; Committee on Penicillin Rept 442). Mar 1945. 12 p.
Price: Microfilm-$1.00 - Photostat-$1.00
This memorandum summarizes the arguments regarding the structure of penicillin. The infra-red work has been designed to determine which of these formulae, (I) the tricyclic, (II) the β-lactam, and (III) the oxazolone-thiazolidine, best represents the structure of the molecule. The spectra of sodium penicillin, and of the methyl ester, and of a very large number of related compounds have been measured. It appears that none of the above formulae is adequate, but the evidence can be convincingly satisfied by a small modification of (III). Oxford University.

PB L 79855. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Attempts to synthesise thiazoline-oxazolone structures. By A. H. Cook and others. (British Rept Br 161-161a; Committee on Penicillin Synthesis Rept 443 and 461). Mar 1945. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
Attempts to prepare appropriate thiazolines and a study of the reaction between ethyl acetoacetate and ethyl malonate on the one hand, and penicillamine or its ester on the other was made. Imperial College.

PB L 79856. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Properties of oxazolones. By J. L. Bailey. (British Rept Br 162; Committee on Penicillin Synthesis Rept 444). Mar 1945. 3 p.
Price: Microfilm-$1.00 - Photostat-$1.00
The experiments described were carried out to test the possibility of identifying the point of attachment of the lactone oxygen in penicillin. In order to economise in the use of penicillin, preliminary experiments were carried out with 2-phenyloxazolone. British Drug Houses, Ltd.

PB L 79857. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Action of hydrazine on certain oxazolones. Interim report. By J. P. Wilson and others. (British Rept Br 163; Committee on Penicillin Synthesis Rept 445). Mar 1945. 4 p.
Price: Microfilm-$1.00 - Photostat-$1.00
The following compounds were studied: (A) 4-benzylidene-2-phenyloxazolone to produce 4-benzoylamino-3-phenyl-5-pyrazolidone, (B) 4-isopropylidene-2-phenyloxazolone to produce α-benzoylamino-β-methylcrotonhydrazide, and (C) 2-phenyl-4-methyloxazolone to produce benzoylanine hydrazide. Oxford University.

PB L 79858. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Cyclisation of esters of ∝-thioacylamino acids. Interim report. By C.I. Broderick and others. (British Rept Br 164; Committee on Penicillin Synthesis Rept 446). Mar 1945. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
This report describes the successful conversion of ethyl thiophenaceturate to 5-ethoxy-2-benzyloxazole. Further improvements in the experimental conditions are being sought. Boots Pure Drug Co. Ltd.

PB L 79859. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Preparation of penicillamines. By J. L. Bailey and others. (British Rept Br 165; Committee on Penicillin Synthesis Rept 458). Mar 1945. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
The present communication describes a further application of the hydrogen sulfide addition reaction in the presence of tertiary amines. The British Drug Houses Ltd.

PB L 79860. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Attempts to synthesise penicillin analogues. By A. H. Cook. (British Rept Br 166; Committee on Penicillin Synthesis Rept 462). Mar 1945. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
The present work has for its eventual object the preparation of thiazolidine-oxazolones from further thiolaminoacids, i.e. of penicillins in which the penicillamine moiety has been modified. In order to examine the behavior of a thiolamino-acid which might be expected to differ considerably from penicillamine and which might render the oxazolone and thiazolidine rings more compatible, β-phenylcysteine was selected for study. Imperial College.

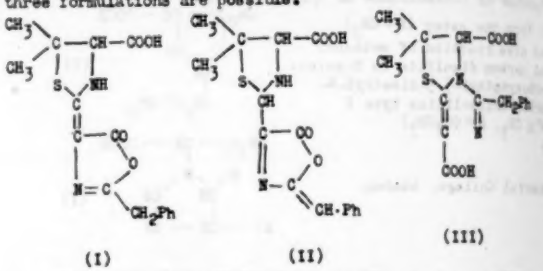
PB L 79861. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Thiazoline derivatives related to penicillamine. Interim report. By E. P. Abraham and others. (British Rept Br 167; Committee on Penicillin Synthesis Rept 463). Apr 1945. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
This paper describes some as yet incomplete experiments directed towards the synthesis of penicillin via its thiazoline analogue, involving the preparation of imino-ethers with penicillamine methyl ester hydrochloride. Oxford University.

PB L 79862. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Intermediates for the synthesis of tricyclic penicillin. By F. C. Copp. (British Rept Br 168; Committee on Penicillin Synthesis Rept 464). Apr 1945. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
This required the preparation of N-benzyl-ββ-diethoxyalanine and its phenylacetyl derivative. The preparation of the former was successfully carried out and recorded but attempts to prepare the phenylacetyl derivative have only given an unsatisfactory gum, but the benzoyl compound, ethyl N-benzyl-norpenaldate can be prepared smoothly by direct formylation of etnyl N-benzylhippurate or ethyl N-methyl hippurate. Both norpenaldate derivatives react readily with aniline and benzylamine to give the corresponding anilino and benzylamino derivatives. Ethyl N-benzyl norpenaldate reacted with glycine to give ∝-(N-benzyl-N-benzoylamino)-β-carboxymethylamino acrylic ethyl ester. Attempts to prepare the acetals were unsatisfactory. The Welcome Chemical Research Laboratories.

PB L 79863. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Crystal structure of sodium penicillin-II. By C. W. Bunn and A. Turner-Jones. (British Rept Br 169; Committee on Penicillin Synthesis Rept 465). Apr 1945. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
This summarizes the position reached in the X-ray study of the crystal structure of sodium penicillin. An electron density map diagram is attached. Further work is being done. Imperial Chemical Industries Ltd.

PB L 79864. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Penicillin. Interim report on synthetic studies. (British Rept Br 170; Committee on Penicillin Synthesis Rept 479). Apr 1945. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00
A) Oxazoles, oxazolones and related compounds - the study of the action of phosphorus pentoxide on a number of acylglycine esters by refluxing in chloroform to form 5-alkoxyoxazoles and the acylglycine derivative of N.N'-diethylformamidine are described. (B) Penicilloates and related intermediates - attempts are made to carry out ring-closures of the alkoxyoxazole type on various penicilloic esters. Dibenzyl norpenicilloate was first prepared but this ester was not crystalline and other esters have been studied in order to obtain more suitable starting materials for ring closure experiments. Imperial Chemical Industries Ltd.

PB L 79865. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Dehydropenicillin. By G. Newbery and R. Raphael. (British Rept Br 171; Committee on Penicillin Synthesis Rept 478). Apr 1945. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
Work has been continued on the structure of the compound described in CPS Rept 378 and on its reduction. The following three formulations are possible.



(I) (II) (III)

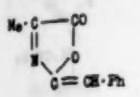
Formula III, a dibasic acid, is definitely ruled out by titration neutralization; formula II, pseudoxazolone, is discounted by ozonolysis; formula I probably is the correct one because the compound fails to react with mercuric chloride and because of the ultraviolet absorption maximum. May & Baker Ltd.

PB L 79866. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Infra-red measurements on the structure of penicillin and related compounds. By R. E. Richards and H. W. Thompson. (British Rept Br 172; Committee on Penicillin Synthesis Rept 480). May 1945. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00
Further arguments are given in favor of the modified thiazolidine-oxazolone formula for penicillin G, and reasons are given which may satisfactorily account for some abnormal interatomic distances which have been observed. Recent American infra-red measurements are briefly discussed in relation to the structure of the molecule. Oxford University.

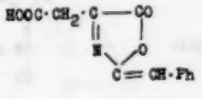
PB L 79867. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Condensation of acyl glycines with acetone, and preparation of 2-phenyl-4-hydroxyethylidene-5-oxazolone. By D. F. Elliott and others. (British Rept Br 173; Committee on Penicillin Synthesis Rept 490). May 1945. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00
(A) Unfortunately even under the improved conditions mentioned in the report, condensation between aceturic acid and acetone could not be effected. (B) The preparation and reactions of 2-phenyl-4-hydroxyethylidene-5-oxazolone are given. Glaxo Laboratories Ltd.

PB L 79868. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Further contributions to the chemistry of pseudoxazolones. Interim report. By F. E. King and others. (British Rept Br 174; Committee on Penicillin Synthesis Rept 491). May 1945. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

The pseudoxazolone (I) has hitherto been prepared under anhydrous conditions, but the ring-closure of α-bromphenacetylalanine takes place even in presence of water, and it is possible to obtain satisfactory yields of (I) by the use of acetic anhydride and aqueous sodium acetate. The hydroxyamide of alanine N-mandelyl may be converted into 4-methyl-2-benzylidene pseudoxazolone (I) by treatment with acetic anhydride in pyridine or potassium carbonate, or with phosphorus tribromide and pyridine. Yet another method for preparation of (I) consists in the oxidation of 4-methyl-2-benzyloxazolone by means of bromine in pyridine. 4-(β-Carboxyethyl-2-benzylidene pseudoxazolone (II) has been prepared α-bromphenacetylglutamic acid in the usual way, and was also obtained without isolation of the intermediate by cyclization in aqueous solution. A pseudoxazolone color reaction is noted which is not observed with true oxazolones.



(I)



(II)

Oxford University.

PB L 79869. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Preparation of 2-o-anyl-5-chloro-oxazole-4-aldehyde and its condensation with penicillamine. Interim report. By J. W. Cornforth and others. (British Rept Br 175; Committee Penicillin Synthesis Rept 492). May 1945. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00

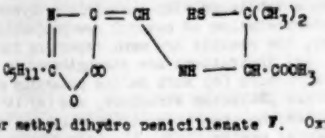
The report gives a step by step description, with structural drawings, of the 6-stage conversion of the acid to the aldehyde. The formation of a thiazolidine from the aldehyde and d-penicillamine proceeded normally and the monohydrochloride was obtained without difficulty. Oxford University.

PB L 79870. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Further experiments in the thiazolone series. By A. H. Cook and others. (British Rept Br 176; Committee on Penicillin Synthesis Rept 500). May 1945. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00

The reactions described in this report have been paralleled in other series to establish their generality and for more specific reasons. Cf British CPS Repts. 386 (PB L 79834), 387 (PB L 79836), 430 (PB L 79849) and 440 (PB L 79852). Imperial College.

PB L 79871. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Infra-red measurements on penicillin and related compounds. By H. W. Thompson and R. E. Richards. (British Rept Br 177; Committee on Penicillin Synthesis Rept 502). May 1945. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00

This is a discussion of the infra-red absorption spectrum in in support of the formula



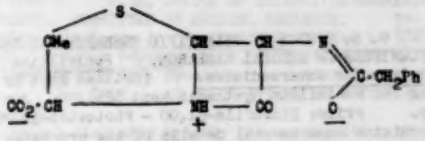
for methyl dihydro penicillenate V. Oxford University.

PB L 79872. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. The structure of penicillin. By Dorothy Crowfoot and Barbara W. Rogers. (British Rept Br 178; Committee on Penicillin Synthesis Rept 508). Jun 1945. 15 p. Price: Microfilm-$1.00 - Photostat-$1.00

This is a discussion of the X-ray analysis of both rubidium- and potassium penicillin. The conclusion was reached through a series of successive approximate Fourier projections on the three main crystallographic planes, a, b, and c. The arrangement conforms closely to one that might be expected if penicillin has the β-lactam and not the oxazolone structure. Crystallographic data and structure factor values appear in Tables I and II, Fourier projections in Figures 1, 2, and 3. Oxford University.

PB L 79873. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Effect of recent analysis of X-ray data on the theory of penicillin structure. By R. Robinson. (British Rept Br 179; Committee on Penicillin Synthesis Rept 509). May 1945. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

The investigator believes the hypothesis can only be correlated with the newly determined positions of atoms on the basis of the following structure for the anion of alkali metal penicillin-II in the solid state.



Oxford University.

PB L 79874. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Attempted preparation of 2-formyl-5,5-dimethylthiazolidine-4-carboxylic acid and related compounds. By J. Elks and others. (British Rept Br 180; Committee on penicillin Synthesis Rept 510). May 1945. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00

The report discusses the attempted preparation of 2-formyl-5,5-dimethylthiazolidine carboxylic acid by treating penicillamine with dihydroxytartaric acid and its possible structure, however the formula is still undecided. Certain other experiments connected with this work are described in the experimental part. S-Benzyl-N-chloracetyl-penicillamine was prepared but not isolated. An attempt to prepare 2-acetyl-5,5-dimethylthiazolidine-4-carboxylic acid was unsuccessful. Glaxo Laboratories Ltd.

PB L 79875. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Infra-red measurements on penicillin and related compounds. By H. W. Thompson and R. E. Richards. (British Rept Br 181 and 181A; Committee on Penicillin Synthesis Rept 511 and 541). May 1945. 22 p. Price: Microfilm-$1.00 - Photostat-$2.00

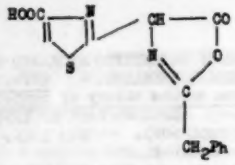
In discussing the structural correlations in previous reports (CPS 442, 480) only the frequencies of the key bands were given. This report includes diagrams showing the spectra of some of the important compounds examined over wider spectral ranges. The spectra are shown as line drawings, and tables of the frequencies of the bands are also given. In order to facilitate comparison with the figures given in American reports, graphs are also included from which the frequencies can be translated into wave-lengths and vice-versa. Additional notes on the charts are given. Oxford University.

PB L 79876. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Attempts to prepare a thiazoline analogue of penicillin. By M. J. S. Dewar. (British Rept Br 182; Committee on Penicillin Synthesis Rept 512). May 1945. 2 p. Price: Microfilm-$1.00- Photostat-$1.00

This report discusses step wise the unsuccessful attempt to prepare a thiazoline analogue of dihydropenicillin-1 (oxazolone formula). An addendum to CPS 418 further confirming the structure of benzoylaminomethylmaleic anhydride is attached. Interim report, Oxford University.

PB L 79877. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Some thiazole derivatives. Interim report. By M. J. S. Dewar and others. (British Rept Br 183; Committee on Penicillin Synthesis Rept 513). May 1945. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00

The object of this research was the synthesis of the thiazolyloxazolone (1) which is analogous to the oxazolone formula for penicillin. Unexpected difficulties have prevented its completion. The report discusses the steps in the development to date.



(1)

Oxford University.

PB L 79878. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Penicillin: Laboratory recipes for intermediates. (British Rept Br 184; Committee for Penicillin Synthesis Rept 525). Jun 1945. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00

This report contains experimental details of the processes found most satisfactory for the preparation of some important intermediates by the following route: (A) Penicillamine; isobutyraldehyde →(valine)→ chloracetylvaline → 2-methyl-4-isopropylidene-5-oxazolone → N-acetylpenicillamine. (B) 2-Benzyl-4-hydroxymethylene-5-oxazolone; ethyl phenaceturate →(ethyl penaldate)——ethyl penaldate dimethyl acetal (ethyl α-phenylacetylamino-ββ-dimethoxy propionate)→ penaldic acid dimethyl acetal (α-phenylacetylamino-ββ-dimethoxy propionic acid)→(2-benzyl-4-methoxymethylene-5-oxazolone)→ 2-benzyl-4-hydroxymethylene-5-oxazolone. Imperial Chemical Industries Ltd.

PB L 79879. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Oxidation studies on thiazolidines; Preparation of methyl penicillin-II-sulphoxide. Interim report. By P. Sykes and A. R. Todd. (British Rept Br 185; Committee on Penicillin Synthesis Rept 526). Jun 1945. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00

This report deals primarily with experiments using sodium metaperiodate as the oxidizing agent, presumably at the sulfur atoms, but since rupture of the thiazolidine ring under the oxidation conditions was likewise a possibility, the oxidation of α-thiolamines by periodate had also to be considered. The preparation of methyl penicillin II sulfoxide is included. Cambridge University.

PB L 79880. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. N-oxyethylpenicillamine and some derivatives thereof. By R. Bentley and others. (British Rept Br 186; Committee on Penicillin Synthesis Rept 527). Jun 1945. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

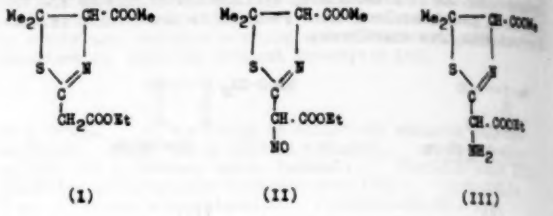
The purpose of this report is to describe a facile substitution of penicillamine to give a product which may have practical advantages over N-methylpenicillamine. Imperial College.

PB L 79881. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Properties of benziminazolols. By W. Bradley and others. (British Rept Br 187; Committee on Penicillin Synthesis Rept 528). Jun 1945. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

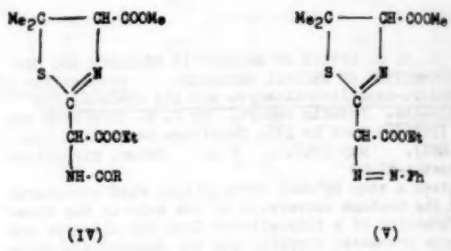
The carbinol character is supported by the results of all the tests which have been applied including acylation and the reactions with Deniges' reagent, quinones, bromine and p-nitrophenyldiazonium chloride. The esters showed no tendency to pass into the lactone but a betaine was formed on treating the parent acid. British Drug Houses Ltd.

PB L 79882. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Further experiments in the thiazoline series. By A. H. Cook and others. (British Rept Br 188; Committee on Penicillin Synthesis Rept 529). Jun 1945. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00

In CPS Rept 443 (PB 79855) is described a preparation of (I) and the mention of next objectives (II), (III), and (IV). In CPS Rept 463 (PB 79861) (I) has been prepared by another route and preliminary experiments towards the later stages are described. The present report is of interest since reagents are used which seem to preclude the possibility of reduction to a thiazolidine.



(I) (II) (III)



(IV) (V)

Imperial College.

PB L 79883. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Further studies on imidazolidines and oxazolidines. Interim report. By J. Baddiley and others. (British Rept Br 189; Committee on Penicillin Synthesis Rept 544). Jun 1945. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

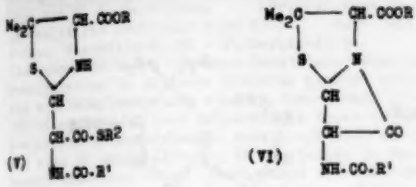
This report discusses briefly the successful and unsuccessful preparation of imidazolidines and oxazolidines. Cambridge University.

PB L 79884. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Crystal structure of sodium penicillin-II. By C. W. Bunn and A. Turner-Jones. (British Rept Br 190; Committee on Penicillin Synthesis Rept 546). Jun 1945. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00

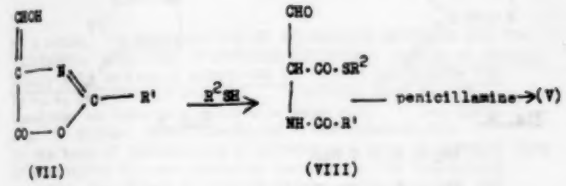
Although it still cannot be said that the chemical structure of the molecule has been established with certainty progress has been made in the interpretation of several new projections of the crystal structure, the results are worth reporting for the following reasons: (a) indications are strengthened in favor of the β-lactam structure (b) work on the potassium and rubidium salts point to the β-lactam structure, and (c) it is worth while to summarize the present position which has been reached by the study of projections. Electron density maps are attached - Figures 1, 2, and 3. Imperial Chemical Industries Lts.

PB L 79885. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. The reaction of mercaptans with oxazolones and penicillenates. By F. C. Copp and others. (British Rept Br 191; Committee on Penicillin Synthesis Rept 542). Jun 1945. 11 p. Price: Microfilm-$1.00 - Photostat-$1.00

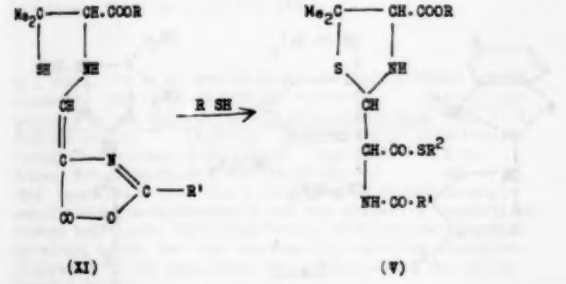
An investigation of the reaction between mercaptans and oxazolones was carried out. There appeared to be three solutions to the synthesis of the required β-thioester of penicilloic acid or the β-lactam penicillin directly by such a procedure, namely: (a) the rupture of a hydroxymethylene-oxazolone (VII) with a mercaptan to yield a thiopenaldate (VIII) followed by its condensation with penicillamine, (b) by taking advantage of the known lability of the oxazolone ring in ethylthiomethylene-oxazolones (IX) to prepare by means of a mercaptan the α-ethylthiomethylene-N-acylglycine thioester (X) it was hoped that the thioester (X) might undergo condensation with penicillamine under certain conditions to give the β-lactam penicillin directly, and (c) the treatment of a penicillenate (XI) with a mercaptan



(V) (VI)



(VII) (VIII)



(XI) (V)

The Wellcome Chemical Research Laboratories.

PB L 79886. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Experiments on the syntheses of pseudo-oxazolones. By F. C. Copp and others. (British Rept Br 192; Committee on Penicillin Synthesis Rept 547). Jul 1945. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

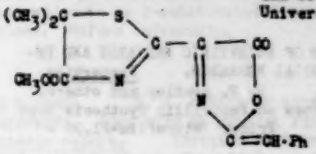
The report discusses briefly the formation of a pseudo-oxazolone using N-Δ-hexencylalanine, N-mandelylalanine and N-(o-acetylmandelyl) alanine. The Wellcome Chemical Research Laboratories.

PB L 79887. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Some oxazolones and iminazolones. Interim report. By M. J. S. Dewar and R. Robinson. (British Rept Br 193; Committee on Penicillin Synthesis Rept 548). Jun 1945. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00

A number of substituted azlactones and iminazolones have been synthesized and a derivative of stilbamidine with two additional basic centers was also prepared. The compounds have been submitted for general pharmacological test. Oxford University.

PB L 79888. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. A thiazoline-pseudoxazolone project - Part I. Interim report. By J. A. Barltrop and others. (British Rept Br 194 and 194a; Committee on Penicillin Synthesis Rept 549 and 553). Jun 1945. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

Further work has been done along the lines described in CPS Rept 463 (PB L 79861) directed towards the synthesis of the thiazolinylpseudoxazolone (I) which might be susceptible of reduction to the thiazolidinyloxazolone structure. British Rept 194a; CPS Rept 553, is attached as a correction at the end of this report. Oxford University.



PB L 79889. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Use of ethoxymethyleneoxazolones for synthetical studies in the indole series. Interim report. By H. R. Bentley and R. Robinson. (British Rept Br 195; Committee on Penicillin Synthesis Rept 550). Jun 1945. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00

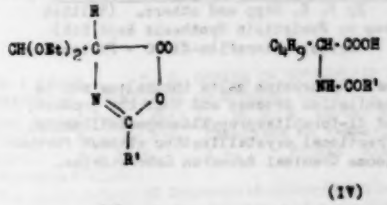
This report discusses briefly the condensation of indole with hippuric acid under the Erlenmeyer conditions to produce 4-(3' indolylmethylene)-2-phenyl oxazolone and directly from indole by condensation with 4-ethoxymethylin-2-phenyloxazolone. Oxford University.

PB L 79890. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Infra-red studies on penicillin and related compounds. By G.B.B.M. Sutherland and S. E. Darman. (British Rept Br 196; Committee on Penicillin Synthesis Rept 551). Jul 1945. 20 p. Price: Microfilm-$1.00 - Photostat-$2.00

The present report had its origin in a request for an opinion on the spectroscopic evidence available in December 1944 for various proposed penicillin structures. It was felt that the evidence was so conflicting that more experimental work was required. The purpose of this report is two-fold: (1) to give the experimental results of the Cambridge work, and (2) to review in as succinct a manner as possible the present state of the spectroscopic approach to the problem of the penicillin structure. Tables and charts accompany this report. Cambridge University.

PB L 79891. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Some further acetal-oxazolones and their behaviour. By A. H. Cook and others. (British Rept Br 197; Committee on Penicillin Synthesis Rept 552) Jul 1945. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00.

In this discussion norleucine was selected as the parent amino acid and converted into the N-phenylacetyl norleucine (IV) ($R^1 = CH_2Ph$) which reacted with ethyl orthoformate with warm acetic anhydride as condensing agent to give a crude acetal-oxazolone. On treatment the pure oily acetal-oxazolone (I) ($R = Bu$, $R^1 = Ch_2Ph$) was obtained. Similar observations were made on N-n-caproylaminonorleucine (IV) ($R^1 = C_5H_{11}$) which was converted into the acetaloxazolone (1) ($R = Bu$, $R^1 = C_5H_{11}$). Imperial College.



(I) (IV)

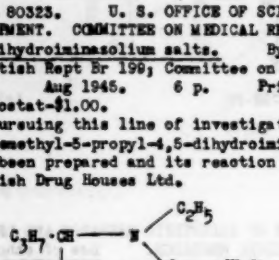
PB L 79892. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. The β-lactam

structure for the penicillins. By E. P. Abraham and others. (British Rept Br 198; Committee on Penicillin Synthesis Rept 554) n. d. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00

From the evidence set forth in the report, "The writers now believe it to be established that their original β-lactam formula represents the correct structure of penicillin, and consider that the hypotheses designed to explain the chemical reactivity and infra-red spectrum of penicillin should be based fundamentally on this structure."

PB L 80323. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Properties of dihydroiminazolium salts. By W. Bradley and others. (British Rept Br 199; Committee on Penicillin Synthesis Rept 582) Aug 1945. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00.

In pursuing this line of investigation 1-ethyl-2-benzyl-3-cyanomethyl-5-propyl-4,5-dihydroiminazolium chloride (II) has been prepared and its reaction with alkalis studied. British Drug Houses Ltd.



PB L 79893. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. β-phenylcysteine and some related compounds. By A. H. Cook and others. (British Rept Br 200; Committee on Penicillin Synthesis Rept 583) Jul 1945. 11 p. Price: Microfilm-$1.00 - Photostat-$1.00.

The desirability of synthesizing and examining the behavior of β-phenylcysteine in relation to penicillamine was expressed in CPS Rept 462 (PB L 79860) and experiments towards that end were described. The present report records the conclusion of the synthesis of this new substituted cysteine. Imperial College.

PB L 79894. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. The reactivity of ethoxymethylene-thiazolones and -oxazolones. By A. H. Cook and others. (British Rept Br 201; Committee on Penicillin Synthesis Rept 584) Jul 1945. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00.

CPS Repts 440, 462, and 500 (PB 79852, 79860, and 79870) described numerous reactions based on that taking place between glycine, carbon disulfide, and ethylating or benzylating agents. Certain further reactions appear to be of interest in other fields; the present account is, therefore, submitted not as a contribution to the penicillin problem but for publication when the intermediates already described in connection with penicillin work can be disclosed. From these results ethoxymethylene oxazolones and thiazolones will be found to react quite generally with "reactive" methine, methylene, and methyl groups and further exploration of these possibilities is in progress. Imperial College.

PB L 79895. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Racemization and resolution of N-formylisopropylidenepenicillamine as the brucine salt. By F. C. Copp and others. (British Rept Br 202; Committee on Penicillin Synthesis Rept 585) Aug 1945. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00.

It has been found that the brucine salts themselves can be subjected to the racemization process and that the product, the l-brucine salt of dl-formylisopropylidenepenicillamine, can be resolved by fractional crystallization without further treatment. The Wellcome Chemical Research Laboratories.

PB L 79896. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Interim report, July 19, 1945. By G. Newbery and others. (British Rept Br 203; Committee on Penicillin Synthesis Rept 591) Aug 1945. 14 p. Price: Microfilm-$1.00 - Photostat-$1.00

This report is divided thus: (a) Modified penicillin types 1, 2, and 3. Type 1 - isoteric penicillin (oxazolone-thiazolidine). Figs. A and B, Type 2 - replacement of the penicillamine residue by a cyclic system to give compounds of the type Fig. C, and Type 3 - products of the oxazolone-thiazolidine type via the oxazolidone as Fig. D. (b) Experiments directed towards models from the penillic acid change, and (c) Miscellaneous - since no authentic substance containing both a thiazolidine and an oxazolone ring in the same molecule has been described the preparation of a simpler compound, Fig. E, was undertaken but it was found to be devoid of antibacterial action. Research Laboratories, May & Baker Ltd.

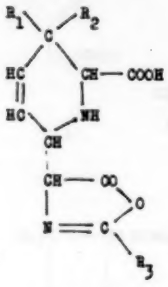


Fig. A

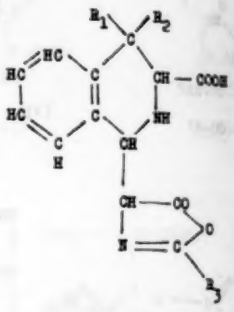


Fig. B

($R_1 = R_2 = O\ Me$)

($R_3 = H$ or $COO\ Et$)

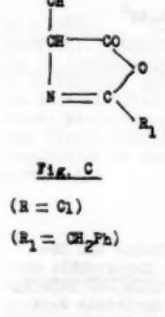


Fig. C

($R = Cl$)

($R_1 = CH_2Ph$)

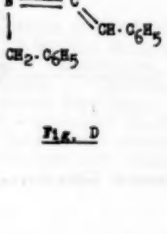


Fig. D

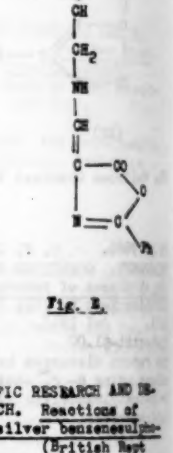


Fig. E

PB L 79897. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Reactions of α-thioacylamido-acids and -esters with silver benzenesulphonate. By C. J. Brodrick and others. (British Rept Br 204; Committee on Penicillin Synthesis Rept 592) Aug 1945. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00.

The report discusses further work on cyclization of ethyl thiophenacetate, methyl- and benzyl-thiopenaldate - II diethyl acetal with silver benzenesulfonate and pyridine. 2-(Phenylthioacetamidocarbethoxymethyl)-3-methylthiazolidine was prepared as a model for the proposed cyclization of thiopenicilloic esters. Boots Pure Drug Co. Ltd.

PB L 79898. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Further experiments on oxazolones. By D. P. Elliott and others. (British Rept Br 205; Committee on Penicillin Synthesis

Rept 593) Aug 1945. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00.
The report discusses briefly the preparation and reactions of 4-acetyl-4-methyl-2-phenyl-5(4)-oxazolone, 4-methyl-2-phenyl-5(4)-oxazolone, 1,4-dibenzoyl-2,5-dimethyl-piperazine-3,6-dione, ethyl α-benzoylaminoacetoacetate, and 4-hydroxy-ethylene-2-phenyl-5(4)-oxazolone. Glaxo Laboratories Ltd.

PB L 79899. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Immunological evidence bearing on the structure of penicillin. By P.G.H. Gell and C. R. Harington. (British Rept Br 206; Committee on Penicillin Synthesis Rept 600) Sept 1945. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00.
The theory on which the experiments are based is as follows: Precipitation in antisera prepared against antigens containing a 2-benzyloxazolone ring as determinant groups should be inhibited both by such compounds as those formed by coupling 4-alkoxymethylene-2-benzyl oxazolones with an amino-acid, and also by penicillin-II, if the latter in fact contains a benzyl oxazolone ring. Conclusions are derived and the results are given in the attached table. National Institute for Medical Research.

PB L 79900. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Action of fuming nitric acid in acetic anhydride on sodium penicillin II. By J. C. Clayton and others. (British Rept Br 207; Committee on Penicillin Synthesis Rept 603) Aug 1945. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00.
In the hope of introducing a nitro-group into the phenyl ring of penicillin II, and possibly increasing the biological activity, the effect of fuming nitric acid (d = 1.5; 90% HNO_3) in acetic anhydride on crystalline sodium penicillin II was investigated. The results are shown in the 4 attached tables. Glaxo Laboratories Ltd.

PB L 79901. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Further experiments in the thiazoline and thiazole series. By A. H. Cook and others. (British Rept Br. 208; Committee on Penicillin Synthesis Rept 618) Sep 1945. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00.
This eport deals with the preparation of 2-phenylacetylaminocarbethoxymethylthiazole and the step-wise transitions through hydrolysis, decarboxylation, azlactonization, the hydrazide, azide, and the benzylamide, also the attempted preparation of the oxazolone which resulted in the amide. Imperial College.

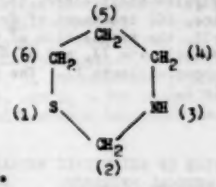
PB L 79902. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. The relative stabilities of thiazolidines. By W. Bradley and M. Gayler. (British Rept Br 209; Committee on Penicillin Synthesis Rept 627) Oct 1945. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00.
The experiments described originated in an attempt to prepare an N-substituted penicillin by condensing penicillin with formaldehyde. In order to conserve penicillin the proposed reaction was tried using 2,2-dimethylthiazolidine-4-carboxylic acid. The stabilities of several thiazolidines were compared with reference to both formaldehyde and benzaldehyde. The principal result was to show that as a class 2-alkylthiazolidine-4-carboxylic acids were stable to both of the aldehydes while 2,2-dialkylthiazolidine-4-carboxylic acids were readily decomposed. A table summarizes the results. British Drug Houses Ltd.

PB L 79903. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. 4-Hydrazinomethylene-2-phenyloxazolone. By R. Robinson and J. P. Wilson. (British Rept Br 210; Committee on Penicillin Synthesis Rept 631) n. d. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00.
Under the conditions described the derivative has been obtained as light orange needles, m.p. 129-130° and is probably the trans-form while the scarlet compound is an unstable cis-form. Oxford University.

PB L 79904. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on substituted 2-phenyl-4-aminomethylene oxazolones. By T. J. King and F. E. King. (British Rept Br 211; Committee on Penicillin Synthesis Rept 632) n. d. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
A series of aminomethylene oxazolones has been made containing basic substituents on the amino nitrogen and in two cases highly colored compounds have been obtained. Some were converted to pyrimidines and this synthesis affords the most convenient route to 2-substituted-5-benzamido-4-hydroxy pyrimidines. Oxford University.

PB L 79905. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Penicillin. Interim report. (British Rept Br 212; Committee on Penicillin Synthesis Rept 634) Oct 1945. 18 p. Price: Microfilm-$1.00 - Photostat-$1.00.
This is a discussion of: (a) oxazole intermediates, (b) experiments on the ring closure of penicilloic esters, (c) thiazolines, the mechanism of the penicillamine synthesis and related topics, and (d) reactions on norpenicilloic acid derivatives. Table I contains the ultra-violet absorption of oxazole derivatives in chloroform solution. Imperial Chemical Industries Ltd.

PB L 79906. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Experiments in the m-thiazane series. Interim report. By J. F. Catch and others. (British Rept Br 213; Committee on Penicillin Synthesis Rept 639) Sep 1945. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00.
The present work was prompted in the ultimate desirability of preparing penicillin analogues containing a m-thiazone in place of the thiazolidine ring,



Imperial College.

PB L 79907. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. α-Amino-β-thiolisobutane. By H.R.V. Arnstein and others. (British Rept Br 214; Committee on Penicillin Synthesis Rept 640) Oct 1945. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00.
The present report describes the preparation of this base for the purpose of the synthesis of penicillins, "decarboxy-penicillins," lacking the penicillamine carboxyl group. Imperial College.

PB L 79911. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Penicillin: Report on structural studies. (British Rept Br 215; Committee on Penicillin Synthesis Rept 646) Nov 1945. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00.
A study of the β-lactam structure through the formation of a penicillin ester containing a heavy atom. Imperial Chemical Industries Ltd.

PB L 79908. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Chemistry of the oxazolones. Part I. By H. J. Barber and F. Slack. (British Rept Br 216; Committee on Penicillin Synthesis Rept 633) Aug 1945. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00.
The preparation of 2-phenyl-4-ethoxymethylene oxazolone, a useful new reagent for primary and secondary amines, is described. May & Baker Ltd., Research Laboratories.

PB L 79912. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Interim report. By J. W. Cornforth and R. H. Cornforth. (British Rept Br 217; Committee on Penicillin Synthesis Rept 647) Nov 1945. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00.
An improved method is described for the preparation of 2-pentenyl-4-hydroxymethylene-5-oxazolone and its reactions to form 2-pentenyl-4-methoxymethylene-5-oxazolone, 2-amyl-4-methoxymethylene-5-oxazolone, 2-pentenyl-4-piperidinomethylene-5-oxazolone and 2-pentenyloxazole-4-carboxylic acid. Reactions of caproylglycine ester to give ethyl β-methoxy- and β-ethoxy-α-caproylaminoacrylate, β-methoxy-α-caproylamino-acrylic acid, and 4-caproylamino-5-pyrazolone. Oxford University.

PB L 79909. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Properties of oxazolones. By F. Copp and others. (British Rept Br 218; Committee on Penicillin Synthesis Rept 641) Nov 1945. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00.
A study of the behavior of 2-p-nitrophenyl-4-benzylthiomethylene oxazolone and the enhanced electron absorption by the nitrophenyl nucleus. The Wellcome Chemical Research Laboratories.

PB L 79910. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Preparation and properties of N-alkyl penaldates and N^7-penicilloates. By F.C. Copp. (British Rept Br 219; Committee on Penicillin Synthesis Rept 642) Nov 1945. 12 p. Price: Microfilm-$1.00 - Photostat-$1.00.
This is a report on: (A) the formylation of -(1)N-benzyl-N-caproylglycine ethyl ester, (2) ethyl-N-methyl aceturate, (3) N-benzyl-N-Δ^{α}-hexenoylglycine ethyl ester, (B) condensation products from penicillamine, (C) treatment of d-α-ethyl-N^7-methylnorpenicilloate-II, the preparation of d-α-ethyl-N^4-acetyl-N^7-methyl norpenicilloate II, and of d-α-ethyl-N^4-isobutyryl-N^7-methylnorpenicilloate II. The absorption spectra are shown in Table I.

PB L 79913. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Synthetic penicillins in small yield. Interim report. By E. P. Abraham and others. (British Rept Br 220; Committee on Penicillin Synthesis Rept 648) Nov 1945. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00.
It has been found that penicillinase rapidly destroys the activity obtained when d-penicillamine is condensed with 2-propyl, 2-amyl, 2-benzyl-4-alkoxymethyleneoxazolones. This would appear to be almost conclusive evidence that the active substances produced in these cases are of penicillin-like structure. The activity obtained from the benzyl compound was greater than that from the amyl, and this in turn was greater than that from the propyl. Oxford University.

PB L 79914. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Condensation of penicillamine with derivatives of 4-hydroxymethylene-2-phenyloxazolone. Interim report. By G. M. Robinson. (British Rept Br 221; Committee on Penicillin Synthesis Rept 649) Nov. 1945. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00.
The report mentions: Work on cinnamoyldiethoxyalanine for the production of 4-ethoxymethylene-2-styryloxazolone; the conversion of 4-ethoxymethylene-2-phenyloxazolone into 4-methoxymethylene-2-phenyloxazolone, the production of crude penicillenic acid, and the antibiotic activity of each. The general method of condensation and table of results is given. Oxford University.

PB L 79915. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Preparation of 2-(2-phenyl-5-chloro-4-oxazolyl)-5: 5-dimethyl thiazolidine-4-carboxylic acid hydrochloride, and its conversion into an anti-biotic substance of penicillin type. Interim report. By L. J. Goldsworthy and R. Robinson. (British Rept Br 222; Committee on Penicillin Synthesis Rept 650) Nov 1945. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00.
This step by step preparation is given together with some of the interesting transformations of the derivatives of 2-phenyl oxazole. Oxford University.

PB L 79916. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Properties of penicillamine derivatives and their bearings on the structure of penicillin. By F. C. Copp and others. (British Rept Br 223; Committee on Penicillin Synthesis Rept 651) Dec 1945. 17 p. Price: Microfilm-$1.00 - Photostat-$2.00
The report is divided into three parts. Part I - Reactions of penicillamine and related compounds with sulfhydryl reagents - The work described was initiated by observations made on the products of condensation of penicillamine with 2-phenyl-4-ethoxymethylene-5-oxazolone and with 2-p-amyl-4-hydroxymethylene-5-oxazolone. A comparative study of the reaction of a series of compounds related to penicillamine with ferric chloride, sodium nitroprusside, and sodium azide/iodine was made and the results are given in the accompanying table. Part II - Polarographic investigations - The results are shown in a series of polarograms, a key for which is given. The series 1-12 was taken at 40 μA for full scale, the series 13-40 with a different capillary at 20 μA full scale. No use is made of the absolute current corresponding to polarograms presented. The voltage scale is easily identified by the central vertical heavy line in each diagram, which occurs at approximately -1.5 volts, the light lines indicating divisions of 0.1 volt. Temperature of all solutions polarographed was 25°. Part III - Preparations. The Wellcome Chemical Research Laboratories.

PB L 79917. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Esters of penicillamine. By F. C. Copp and others. (British Rept Br 224; Committee on Penicillin Synthesis Rept 671) Dec 1945. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00.
A more convenient procedure for the quantitative preparation of esters of penicillamine is given. This method has been applied to a number of penicillamine esters, some of which have not been previously described. The Wellcome Chemical Research Laboratories.

PB L 79918. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Comments on the preparation of dl-penicillamine. Synthesis of dl-β-ethylcysteine - an isomer of penicillamine. By F. C. Copp and others. (British Rept Br 225; Committee on Penicillin Synthesis Rept 672) Dec 1945. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00.
This report contains some additional observations on β,β-dimethylcysteine together with the complete synthesis of β-ethyl cysteine. The Wellcome Chemical Research Laboratories.

PB L 79919. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Dehydropenicillin. By G. Newbery and others. (British Rept Br 226; Committee on Penicillin Synthesis Rept 674) Dec. 1945. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00.
Work has been continued on attempts to synthesize a thiazoline-pseudoxazolone. All attempts to condense chlorphenacetylaminoacetoacetic ester with penicillamine and its derivatives failed. Endeavors to prepare the corresponding diethyl ketal were unsuccessful. Norpenicilloamide hydrochloride was prepared but showed no sign of elimination of ammonium chloride on heating, either alone or suspended in a solvent. Below about 110° the substance was recovered unchanged; above 110° the compound decomposed completely. May & Baker Ltd.

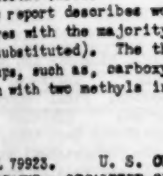
PB L 79920. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Alkaline degradation of methyl penicillin-II sulphoxide and related studies. By F. Sykes and A. R. Todd. (British Rept Br

227; Committee on Penicillin Synthesis Rept 677) Jan 1946. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00.
Further studies have been carried out on the alkaline degradation of methyl penicillin II sulfoxide in the hope of throwing fresh light on the problem of penicillin structure; these experiments are dealt with in Part I. In Part II are described auxiliary studies on thiazolidine oxidations with periodate and iodate; in the course of these studies the p-nitrobenzyl ester and the m-toluidine salt have been found to be suitable derivatives for the isolation and identification of penicillaminic acid. Cambridge University.

PB L 79921. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. New syntheses of penicillamine. By J. R. Catch and others. (British Rept Br 226; Committee on Penicillin Synthesis Rept 678) Jan 1946. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
(1) Synthesis from glycine, carbon disulfide, etc., and (2) synthesis by the Strecker Method. Imperial College.

PB L 79922. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Further experiments in the thiazoline series. By A. H. Cook and others. (British Rept Br 229; Committee on Penicillin Synthesis Rept 680) Jan 1946. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00.
This report describes work on 2-thiazolineacetic acid derivatives with the majority containing α-amino derivatives (N-substituted). The thiazoline ring has as attachments groups, such as, carboxy, methoxy, or ethoxy in the 4 position with two methyls in the 5 position. Imperial College.

PB L 79923. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Interim report. By R.Robinson and M.A.T. Rogers. (British Rept Br 230; Committee on Penicillin Synthesis Rept 683) Jan 1946. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00.
This report describes the condensation of: (A) penicillamine hydrochloride with 4-(acyl-2',4'-dichlorophenylaminomethylene) -2-phenyl-oxazolone, and (B) N-methylpenicillamine and 4-ethoxymethylene-2-benzyloxazolone. Oxford University.

PB L 79924. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Interim report. By J. W. Cornforth and E. Fawaz. (British Rept Br 231; Committee on Penicillin Synthesis Rept 684) Jan 1946. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00.
Evidence is presented to show that amino-oxazole aldehydes of type  are the normal products of formylation. Oxford University.

PB L 79925. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Synthetical studies in the penicillin-III series. Part I. By D. G. I. Felton and F. E. King. (British Rept Br 232; Committee on Penicillin Synthesis Rept 685) Jan 1946. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00.
In order to devise a route to penicillin III derivatives, from which the phenolic penicillin itself might ultimately be obtained, some o-benzylpenicillin III intermediates have been prepared and subjected to debenzylation by means of methanolic hydrogen chloride or by catalytic hydrogenation. A comparative study has been made of the methods available for the preparation of p-hydroxyphenylacetic acid, principal source of the essential p-benzyloxyphenylacetic acid, also synthesized in small amounts from phenylbenzyl ether. Hydrogenolysis of the p-benzyloxyphenacetyl derivative of aminoacetaldehyde diethylacetal gave penillo-III-aldehyde diethylacetal, identified by its 2,4-dinitrophenylhydrazone, which was also formed on acid hydrolysis of the 2,4-dinitrophenylhydrazone from p-benzyloxyphenacetyl derivative. Oxford University.

PB L 79926. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Biosynthesis of the penicillins. Part IV. By E. L. Smith and others. (British Rept Br 233; Committee on Penicillin Synthesis Rept 686) Feb 1946. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
Work on biosynthesis has been limited to the severely practical test of whether the substance to be examined caused a significant increase in titre on addition to corn steep medium in surface culture. Glaxo Laboratories Ltd.

PB L 79927. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Preparation of crystalline penicillin. By E. Lester Smith and others. (British Rept Br 234; Committee on Penicillin Synthesis Rept 687) Feb 1946. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00.
A method is given which produces the highest yield of crude crystalline product followed by methods for purification and recrystallisation yielding better than 80% of the pure crystallization product. New bases for penicillin crystallisation are given and a method of crystallization from aqueous solutions. Table I gives solubility results, Table II the destruction of pure penicillin in chloroform at room temperature by bases. Glaxo Laboratories Ltd.

PB L 79928. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Condensation of oxazolones with penicillamine - Conclusion. Final report. By F. C. Copp and others. (British Rept Br 235; Committee on Penicillin Synthesis Rept 688). Feb 1946. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
The report is divided as follows: (A) Condensation of oxazolones with penicillamine, (B) Preparation of compounds structurally related to penicillin and its degradation products - 1, esters of penicillamine and related substances, 2, thiazolidines, 3, condensation products of oxazolones with amino- compounds, and 4, a few miscellaneous compounds. The Wellcome Chemical Research Laboratories.

PB L 85413. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Interim report. By J. W. Cornforth and R. H. Cornforth. (British Rept Br 237; Committee on Penicillin Synthesis Rept 689). Feb 1946. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
This report deals with oxazole derivatives and in particular with the preparation of ethyl 2-amyl-5-amino-oxazole-4-carboxylate by the action of hydrogen chloride on ethyl caproylaminocyanoacetate. Oxford University.

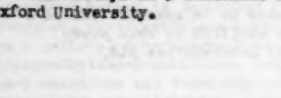
PB L 85414. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Preparation and reactions of 4-chloromethylene-2-phenyloxazolone. Interim report. By J. B. Poole. (British Rept Br 238; Committee on Penicillin Synthesis Rept 690). Mar 1946. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
This compound was prepared in the hope that it would be of service as an intermediate. 4-Ethoxymethylene-2-phenyloxazolone was prepared from hippuric acid ethyl orthoformate and acetic anhydride, using a modified method for isolation. Various reactions are carried out. Condensation without a base being present -thiobis-(4-methylene-2-phenyloxazolone was obtained, using a strong base intractable gums were obtained from which nothing crystalline could be isolated. Oxford University.

PB L 85415. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. The preparation of 2-n-heptyl-4-methoxy methylene-5-oxazolone and its condensation with α-penicillamine. Interim report. By C.T. Beer and J. W. Cornforth. (British Rept Br 239; Committee on Penicillin Synthesis Rept 691). Mar 1946. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
Using the method given in CPS Rept. 647: PB 79912. 2-heptenyl-

4-hydroxymethylene-5-oxazolone has been prepared from $\Delta^{\alpha\beta}$-octenoyl glycine and converted to 2-n-heptyl-4-methoxymethylene-5-oxazolone. Condensation of the latter compound with d-penicillamine under the conditions described gave a bacteriostatic solution with an activity of the same order as that previously obtained from similar oxazolones. 2-Hepteryl-4-anilinomethylene-5-oxazolone has also been prepared. Oxford University.

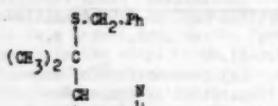
PB L 85416. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Interim report. By A. B. A. Jansen. (British Rept Br 240; Committee on Penicillin Synthesis Rept 692) Mar 1946. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

Hippuryl-S-benzylpenicillamine methyl ester (III, R = CH_3) and ethyl α-hippurylamine-β-methyl-crotonate (IV, R = C_2H_5) have been synthesized, but could not be formylated. Attempts to prepare the oxazolones (V) and (VI) from hippuryl-S-benzyl-penicillamine (III, R = H) and α-hippurylamine-β-methyl-crotonic acid (IV, R = H) respectively were unsuccessful.



(III)

(IV)



(V)

(VI)

Oxford University.

PB L 85417. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Synthetic penicillin studies in progress. Interim report. (British Rept 241; Committee on Penicillin Synthesis Rept 693). Apr 1946. 16 p. Price: Microfilm-$1.25 - Photostat-$2.00

The principal points studied are: (A) a further investigation of the reaction of phosphorus pentachloride with dibenzyl nor penicilloate-II which has led to the view that it is a mixture of benzyl 2-(2'-phenyl-5'-benzyloxy-4'-oxazolyl)-5,5-dimethylthiazolidine-4-carboxylate and a modified form of benzyl nor penicillonate-II; (B) the preparation and reactions of derivatives of the 2-phenyl-5-chloro- and the 2- phenyl-5-ethoxyoxazole series; (C) the preparation of a new member of the 5-amino-oxazole series, 2-phenyl-4-carbobenzoxy-5-amino-oxazole; (D) the preparation of 2-benzyl-5-alkoxy-oxazoles by the use of phosphorus pentoxide; (E) the preparation of the following 2-carboxylic esters in the thiazoline series, 5,5-dimethyl-2,4-dicarbomethoxythiazoline, 5,5-dimethyl-4-carbomethoxy-2-carbethoxythiazoline, and 5,5-dimethyl-2,4-dicarbethoxythiazoline; (F) the conversion of ethyl hippurate by the action of phosphorus pentasulfide into a base which is probably 2-phenyl-5-ethoxythiazole; and (G) an improved procedure for the preparation of penicillamine benzyl ester hydrochloride. Ultra violet absorption curves are attached to the report. Imperial Chemical Industries Ltd.

PB L 85418. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. The structure of penicillin. By C. W. Bunn and others. (British Rept Br 242; Committee on Penicillin Synthesis Rept 694). May 1946. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

The three dimensional electron density calculations which have been carried out on both sodium and potassium penicillin confirm the correctness of the conclusions that the atomic arrangement found in crystalline sodium and potassium penicillin establishes the presence in the molecule of a four membered ring fused to the thiazolidine ring. From the evidence obtained it is believed the X-ray data proves beyond a doubt the β-lactam formula. Table I gives the atomic coordinates, A and B respectively, Figure I-electron density in region of β-lactam ring. Laboratory of Chemical Crystallography, University Museum, Oxford. Imperial Chemical Industries Ltd.

PB L 85419. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Synthetic studies in the series of substituted 5-chloro-oxazole-4-aldehydes. Interim report. By L. J. Goldsworthy and R. Robinson. (British Rept Br 243; Committee on Penicillin Synthesis Rept 695). May 1946. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

The work on the benzyl series of oxazoles has been continued, and has resulted in the synthesis of 2-benzyl-5-chloro-oxazole-4-aldehyde. This has been condensed with d (+) penicillin to give a thiazolidine which has no biological activity and is not made active by treatment with pyridine. The various stages involved in the synthesis are given. Oxford University.

PB L 85420. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Infra-red studies on penicillin and related compounds. Final report. By G. B. B. M. Sutherland and S. E. Darmon. (British Rept Br 236; Committee on Penicillin Synthesis Rept 696). n. d. 29 p. Price: Microfilm-$1.50- Photostat-$3.00

Infra-red spectra of various penicillins and related compounds have been studied in the region 2.5-15 mμ. Particular attention has been paid to certain key frequencies which can be assigned to definite chemical bonds, so that these can be used to prove the presence or absence of certain key groupings in the penicillin molecule. Experimental results have been correlated with those of other laboratories and explanations suggested for certain discrepancies. The infra-red evidence is considerably in favor of the β-lactam structure, although it cannot be said to be conclusive there is certainly more spectroscopic evidence against all the other formulae. It is suggested that the spectroscopic method may be most profitably employed in the future in studying the breakdown of penicillin in conditions resembling those found in its biological applications. Tables and charts accompany the report. Laboratory of Colloid Science, Cambridge.

PB L 85421. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Infra-red studies on penicillin and related compounds. Appendix to final report. By G. B. B. M. Sutherland and S. E. Darmon. (British Rept Br 236a; Committee on Penicillin Synthesis Rept 697). n. d. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00

In this appendix are given the wavelengths and corresponding frequencies of all the absorption bands in the spectra discussed in CPS Rept 696; PB 85420. The spectra were observed in the region 2-5 mμ with a Hilger D. 88 prism spectrometer using either a lithium fluoride prism, or (in the earlier work) a fluorite prism, in the region 5-9.5 mμ, with a fluorite prism or a Hilger D. 209 double beam spectrometer with a rock salt prism, in the 9.5-15 mμ a D. 209 with a rock salt prism. The tables of wavelengths and frequencies are arranged in the order in which the spectra of the compounds appear in the diagrams in the text (PB 85420). Below the name of each compound are bracketed key letters which give the physical state of the examination and the spectroscopic conditions. Laboratory of Colloid Science, Cambridge.

Dyes

PB L 27908. JULIUS and FUSSENEGGER. Acid alizarin brown 2 B Hoechst. (I. G. Farbenindustrie. Journal of Central Laboratory for dyestuffs). (Frames 6578-6584 of FIAT Microfilm Reel 5A). Jun 1903. 5 f. Price: Microfilm-$1.00 - Enlargement print-$1.50
The dye is the combination of 2-amino -6-nitrophenol-4-sulfonic acid with m-phenylen-diamine. A small quantity of naphthol yellow S is added as diluent. In German.

PB L 27911. JULIUS and JEHL. Chrome dyes from acetyl derivatives of 2-amino-6-nitrophenol-sulfonic acid (nitro acid I). (I. G. Farbenindustrie. Journal of Central Laboratory for dyestuffs). (Frames 6597-6602 of FIAT Microfilm Reel 5A). Dec 1903. 3 f. Price: Microfilm-$1.00 - Enlargement print-$1.50
Three different types of chrome dyes were prepared from acetyl derivatives of 2-amino-6-nitrophenol-sulfonic acid. Among them a bluish-black diamino urea-β-naphthol combination was found particularly valuable. In German.

PB L 27910. JULIUS and KELLER. Monoazo dyes (chromable) from amino isophthalic acid. (I. G. Farbenindustrie. Journal of Central Laboratory for dyestuffs). (Frames 6590-6591 of FIAT Microfilm Reel 5A). Nov 1903. 2 f. Price: Microfilm-$1.00 - Enlargement print-$1.50
Dyestuffs were prepared from amino isophthalic acid by diazotization and coupling with p-cresol and β-naphthoic acid. The fastness to washing is even less than of anthranilic acid dyes so as to make them unsuitable for practical use. In German.

PB L 27905. JULIUS. Preparation of dyes from amino-nitro-hydroquinone- dimethylether. (I. G. Farbenindustrie. Journal of Central Laboratory for dyestuffs). (Frames 6557-6566 of FIAT Microfilm Reel 5A). Nov 1903. 6 f. Price: Microfilm-$1.00 - Enlargement Print-$1.50
a) Amino-nitro-hydroquinone dimethylether is combined with alpha- naphtylamine- 6- or- 7-sulfonic acid and Schaffer's acid. The nitrogroup is reduced. The obtained dye is similar to "Sambesi true blue 4B." For this dye a patent could not be obtained because of priorities. b) Amino- nitro- hydroquinone- dimethylether is combined with Schaffer's acid, the nitrogroup is reduced and the obtained intermediate dye after diazotising coupled with alpha-naphthylamine-6- or-7- sulfonic acid. This dye is less fast and inferior to (a) in every respect. c) Amino- nitro- hydroquinone-dimethylether is combined with 1,8 dihydroxynaphthalene-4-sulfonic acid. In German.

PB L 27906. JULIUS and ALBRECHT. Selection of 7 dyes of 2,6- diamino-phenol-sulfonic acid. (I. G. Farbenindustrie. Journal of Central Laboratory for dyestuffs). (Frames 6567-6572 of FIAT Microfilm Reel 5A). Nov 1903. 4 f. Price: Microfilm-$1.00 - Enlargement print-$1.50
Of the 7 dyes only two are mentioned in detail; the others, being less useful, appear merely in a chart. The two brown dyes produced from 2,6- diamino-phenol-sulfonic acid are (1) a combination with p-cresol and 2-naphtol, (2) a combination with m-phenylen- diamino-sulfonic acid and m-phenylen-diamine. Also mentioned is the corresponding combination with metatolylene-diamine-sulfonic acid instead of the m-phenylen- diamino-sulfonic acid. In German.

PB L 27909. KALKOW. Reddish sulfur dyes according to patent application A. 9977 IV/22nd of the Firm Geigy, Basel. (I. G. Farbenindustrie. Journal of Central laboratory for dyestuffs). (Frames 6585-6589 of FIAT Microfilm Reel 5A). Nov 1903. 3 f. Price: Microfilm-$1.00 - Enlargement Print-$1.50
Two dyes were made from resorcinol: 1) with dimethyl-o-toluidine and sulfur, 2) with dimethylaniline and sulfur. Both dyes were not fast to washing. In German.

PB L 27907. KALKOW. Yellow sulfur dyestuff from a mixture of m-toluene diamine and benzidine. (I. G. Farbenindustrie. Journal of Central laboratory for dyestuffs). (Frames 6573-6577 of FIAT Microfilm Reel 5A). Nov 1903. 3 f. Price: Microfilm-$1.00 - Enlargement Print-$1.50
By melting the following compounds with sulfur and subsequently extracting them with alkali sulfide the following dyes are obtained: 1) m-toluene diamins produces on cotton "Kryogen Brown G"; 2) m-toluene dithyourea produces on cotton "Kryogen Yellow R"; 3) a mixture of m-toluene dithyourea and benzidine dyes cotton a greenish sulfur yellow shade; 4) a mixture of m-toluene diamine with benzidine dyes cotton a shade similar to that of "Kryogen Yellow R." In German.

PB L 27904. LÜTTRINGHAUS. Asodye from o-o dichloro-p-phenylene diamine and chromotropic acid (1903). (I. G. Farbenindustrie. Journal of Central laboratory for dyestuffs). (Frames 6552-6556 of FIAT Microfilm Reel 5A). Nov 1903. 3 f. Price: Microfilm-$1.00 - Enlargement Print-$1.50
Detailed directions are given for the diazotization of 2,2-dichloro- 1,4 diamino-benzene and coupling with chromotropic acid. The coupling has to be done quickly, the diazo solution not being stable. From 36 g of diamine 100 g of the dye are obtained. This dye imparts violet tints to wool. In German.

Plastics and Plasticizers

PB L 79428. BAIRD, W. Vulcanization accelerators and miscellaneous polymer auxiliary products: Manufacture by I.G. Farbenindustrie. (BIOS Final Rept 1150, Item 22). Oct 1945. 29 p. Price: Microfilm-$1.00 - Photostat-$2.00
Data have been provided on the composition and manufacture of vulcanization accelerators and some miscellaneous auxilary products of interest to the rubber and plastics industries, made by I. G. Farbenindustrie at Leverkusen, Elberfeld and Uerdingen facteries. The accelerators are of the Vulcacit series. The other products considered are Attramentol, Covulsan PAL and E, Desmodur TH and O, Desmophens, Diproxyd, Porofor N, 476, and 505 A, Renacit I, II, and III, Stabilisator P, and Vulcanol B. The information on accelerators should be considered supplementary to that given in BIOS Final Report 661, "Manufacture of vulcanization accelerators and antioxidants by I. G. Farbenindustrie A. G., Leverkusen", PB 47735, v. 4, p. 113, this Bibliography.

*PB L 80404. BLAYOCK, P. W. and ANDERSON, A. H. Emulsion polymerization of vinyl acetate. (BIOS Final Rept 1161, Item 22). Oct 1945. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
The emulsion polymerization of polyvinyl acetate is carried out, at I. G. Höchst, in a modern well designed plant. Polymerization is brought about by adding the monomer to polyvinyl alcohol and water which has been heated to 85-95° C., and containing some hydrogen peroxide and formic acid. A jacketed enameled reaction kettle is used. No heating is required during polymerization. A flowsheet indicates the general flow of materials and the normal conditions in the process. The capacity of the plant is 1000 tons per month of Mowilith emulsion, I. G. Höchst's trade name for polyvinyl acetate. The emulsifying agent is a polyvinyl alcohol, 98.5% saponified, designated as Vinarol 50 B.

*PB L 79583. CROSS, J. and UNSWORTH, A. K. Welding of polyvinyl chloride. Summary of German practice. (BIOS

Plastics and Plasticizers (contd)

Final Rept 1283, Item 22). Jul-Aug 1946. 13 p.
Price: Microfilm-$1.00 - Photostat-$1.00
Four plants were visited in order to study German practice in the welding of hard and soft (plasticized) P.V.C. and to compare the weldability of British P.V.C. using the same methods. The German plants visited were: (1) Messrs. Riedel de Haën, Seelze, Nr. Hanover; (2) Messrs. Krafft and Weichardt, Bremen & Wilderhausen; (3) Dynamit A. G., Troisdorff; and (4) Messrs. Gottfried Hagen, Cologne. Three methods of welding P.V.C. were seen in Germany: (1) Hot air torch, the air being heated by gas or electricity; (2) hand operated, electrically heated - copper bit; and (3) machine welding. Several photographs and sketches are included.

*PB L 80355. MARK, J. G. Development of vinyl acetate copolymers at I. G. Farbenindustrie, Hoechst. (FIAT Final Rept 1166). May 1947. 11 p. Price: Mimeo-$0.50
A large number of monomers were reacted with vinyl acetate under polymerization conditions in order to determine their reactivity and the properties of those polymers which resulted. This report concerns itself with those polymerizations which were successful and which have served or show potential promise of adaption, for the modification of the basic polyvinyl acetate molecule. In general, it was found that about 30% of co-monomer was necessary in order to significantly alter the physical properties of the basic vinyl acetate polymer.

*PB L 78672. ROONEY, JOHN F. The preparation of oil-soluble phenol-acetylene resins for use in surface coatings. (FIAT Tech Bulletin T-38). 4 p. Price: Mimeo-$0.25
The use of Koresin, a resin prepared from p-tertiarybutyl-phenol and acetylene, as well as resins prepared from various phenol homologs and acetylene as oil-soluble resins for the surface coating industry has been investigated by Dr. Hecht of I. G. Ludwigshafen. All phenolic compounds from phenol to p-dodecyl phenol were used in the experiments. The experiments revealed that the higher the number of C atoms in the side-chain of the phenol, the better the solubility in fatty oils and the better the compatability with cellulose derivatives. The higher the adsorption of acetylene, the slower the velocity of the reaction. The most satisfactory of the oil soluble resins were prepared from terpene phenols, p-tertiary butyl phenol and octyl phenol. Two Kunststoff-Kommission reports (in German) give a general picture of the subject matter and indicate the possible industrial application for which these resins could be utilized.

Chemical Engineering and Equipment

PB L 74171. BAYREUTH, GERMANY. SCIENTIFIC LIBRARY. Publications concerning problems of organic and inorganic chemistry. (FIAT Microfilm Reel D 333, Frames 4976-5800) 1932-1940. 825 f. Price: Microfilm-$6.00 - Enlargement print-$82.50.
This FIAT microfilm reel consists of items in the field of chemical technology and organic chemical research. The material was obviously seized in the above institute. Individual items are listed below and will be available as enlargement prints. The entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In Russian.

Frames	Title	Price
4976-5012 PB L 74171	This is the end of a report on natural gas, the beginning of which is reproduced on reel D 332 (PB 74188). n.d. In Russian.	$ 4.00
5013-5289 PB L 74171	"Drying of wood." By Selyuigin. 1940. In Russian. This book describes methods and apparatus for drying various kinds of wood and the industrial application of the products. New technical developments in the U.S.S.R. are discussed.	28.00
5290-5582 PB L 74171	"The catalytic oxidation of organic compounds in the vapor phase." By Marek and Hahn. 1932. In Russian.	29.00
5583-5800 PB L 74171	"Protection of metals against corrosion." By Gurevich. 1938. In Russian. A comprehensive bibliography of patents with annotations is appended to each chapter of this monograph. The book is incomplete, its conclusion being given on Frames 5801-5825 of Reel D 334 (PB 74183).	22.00

PB L 74183. BAYREUTH, GERMANY. SCIENTIFIC LIBRARY. Publications in the field of chemical technology. (FIAT Microfilm Reel D 334, Frames 5801-6645) 1932-1941. 845 f. Price: Microfilm-$6.00 - Enlargement print-$84.50.
This FIAT microfilm reel deals with metallurgical, organic and inorganic chemical subjects. The material was obviously seized in the above institute. Individual items are listed below and will be available as enlargement prints. The entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In Russian.

Frames	Title	Price
5801-5825 PB L 74183	These frames contain the end of a book entitled "Protection of metals against corrosion." By Gurevich, 1938. Its beginning is reproduced on Reel D 333 (PB 74171), Frames 5583-5800. In Russian.	$ 2.50
5826-5998 PB L 74183	"Physical theory of solutions." By Semenchenko. 1941. In Russian.	17.50
5999-6269 PB L 74183	"Kilns and drying apparatus for the production of silicates." By Shvetsova. 1940. In Russian.	27.50
6270-6479 PB L 74183	"Fats and oils as film formers." By Drinberg and Varlamov. 1940. In Russian. This book is based on reports of recent developments in the U.S.S.R. in the above field. An extensive bibliography is included.	21.00
6480-6584 PB L 74183	"Quantitative analysis." By Shapiro. 1941. In Russian. This is a manual on the fundamentals of quantitative analysis with practical examples.	10.50
6585-6645 PB L 74183	"Production of sulfite cellulose." By Nepenin. 1932. In Russian. This treatise is continued and concluded on Reel D 335 (PB 74182).	6.50

PB L 74182. BAYREUTH, GERMANY. SCIENTIFIC LIBRARY. Treatises on applied chemistry. (FIAT Microfilm Reel D 335, Frames 6646-7477) 1937-1940. 832 f. Price: Microfilm-$6.00 - Enlargement print-$83.50.
This FIAT microfilm reel consists of 5 items dealing chiefly with chemical technology. The material was obviously seized in the above institute. Individual items are listed below and will be available in enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In Russian.

Frames	Title	Price
6646-6688 PB L 74182	Conclusion of a treatise on the "Production of sulfite cellulose." n.d. In Russian. The beginning of this is reproduced on reel D 334 (PB 74183).	$ 4.50
6689-6892 PB L 74182	"Technology of paper." By Klopov. 1937. In Russian.	20.50

After a historical review and a theoretical discussion of paper-making the author gives a detailed account of the paper industry in U.S.S.R. The various steps of production are described in the chapters on the sources of wood fiber; the obtaining of wood fiber; the physical properties of wood fiber pulp; the fiber removal including explanations of the essential process, the operation of the machines used, and the influence of various factors; sorting, refining, and pressing of the wood fiber; classification of the wood fiber pulp according to the length of fibers; types of pulping machines; preparation of pulp for high-speed machines for the production of newsprint; and preparation of "dark-brown pulp."

6893-7143
PB L 74182 "Dispersoid analysis." By Hahn. 1940. In Russian. Translated from the German. 25.50

This monograph describes methods of determining the size of particles and the underlying theoretical principles. It constitutes a review of the essential experimental and theoretical facts in the field of colloid chemistry.

7144-7364
PB L 74182 "The chemistry of cellulose." By Shorygin. 1939. In Russian. 22.50

This treatise is subdivided into chapters on plant, animal, and synthetic cellulose; behavior of cellulose in the presence of solvents; oxidative, biochemical, and thermal decomposition of cellulose; simple and complex ethers of cellulose; various cellulose derivatives; hemicellulose, polyuronides, lignin, and chitin.

7365-7477
PB L 74182 Fire-preventing measures in airplane production and aviation. By Tsetlin. 1940. In Russian. 11.50

*PB L 79192. ELLIS, J. F. German acetylene chemical industry: Construction details of Linde plants. (BIOS Final Rept 1061, Item 22, 31). Apr 1946. 55 p.
Price: Microfilm-$2.00 - Photostat-$4.00

Linde methods of construction are unusual judged by normal gas separation standards and call for considerable specialized engineering skill. Their calculation procedure seemed very laborious and although they were not examined in great detail, it did appear that their insistence on low pressure drop, and resulting low compression charges may lead to excessive capital charges. They claimed that they designed their plants to suit the local power conditions. The general design basis of all Linde low-temperature units are reported here. The details of actual plants are included in the reports to be issued on various processes. Line diagrams, sketches, and photographs illustrate the report.

PB L 70179. I. G. FARBENINDUSTRIE, A.G., FRANKFURT AM MAIN-HÖCHST, GERMANY. Chemical plant engineering reports. (FIAT Microfilm Reel O-40, Frames 7899-8725). 1937-1944. 826 f. Price: Microfilm-$6.00 - Enlargement Print-$83.00

This reel was prepared by FIAT investigators in Germany. Individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame number when ordering individual items. In German.

Frames	Title	Price
7899-7902 PB L 70179	Alarm controlled by compressed air. By Röver. Feb 22, 1940. In German.	$1.50
7903-7906 PB L 70179	Liquid level gauge with alarm. By Röver. Feb 14, 1939. In German.	1.50
7907-7916 PB L 70179	Double refracting constituents in liquids. By Boedeker. Sep 25, 1939. In German.	1.50
7917-7924 PB L 70179	Experiences with the antimony-calomel electrodes. Jun 1, 1943. In German.	1.50
7925-7932 PB L 70179	Arrangement for a recording pH-measurement with glass electrode. By Neubert and others. Apr 30, 1941. In German.	1.50
7933 PB L 70179	Improvement of a rack- and - pinion drive. By Röder. Jun 15, 1944. In German.	1.50
7934-7935 PB L 70179	Device for boiler rotation during welding. Apr 3, 1941. In German.	1.50
7936-8021 PB L 70179	Worm spindle geometry. By Maskat and others. Aug 28, 1944. In German.	9.00
8022-8036 PB L 70179	Dosing small quantities of liquid. Dec 1944. In German.	1.50
8037-8039 PB L 70179	Automatic control of endless belts. Dec 4, 1942. In German.	1.50
8040-8054 PB L 70179	New type controlling device for drying chambers. By Dietrich. Feb 24, 1938. In German.	1.50
8055-8121 PB L 70179	Indirect automatic quantity control of rectifying columns. By W. Mats. May 1943. In German.	7.00
8122-8125 PB L 70179	Pressure control for high-viscosity solutions. By Knodel and Röver. Dec 7, 1938. In German.	1.50
8126-8128 PB L 70179	Device for measuring and controlling sulfuric acid concentrations. Sep 14, 1942. In German.	1.50
8129-8137 PB L 70179	Measuring and dividing flowback in distilling columns. Nov 10, 1942. In German.	1.50
8138-8141 PB L 70179	Determination of the flow rate of liquids having different viscosities by vertical slots in sheet metal plates. Oct 12, 1940. In German.	1.50
8142-8151 PB L 70179	German translation of article by F.D. Rosini and A. R. Glasgow in Journal of Research of the Natl. Bureau of Standards, Oct. 1939.	1.50
8152-8182 PB L 70179	Rules for examining control devices and solving control problems. By Engel. In German.	3.50
8183-8198 PB L 70179	Explosion safety device for carbon disulfide- and hydrogen sulfide air-mixtures. By Nauck. Sep 25, 1941. In German.	2.00
8199-8224 PB L 70179	Experiences with substitute materials for stanniferous bearing metal. Apr 5, 1938. In German.	3.00
8225-8256 PB L 70179	Kegelflex-Perbunan couplings from Kauermann, Kommanditgesellschaft. Couplings made from oil, gasoline, and grease-proof Buna. Jan 16, 1941. In German.	3.50
8257-8259 PB L 70179	Bolt failure thru the corrosive action action of sulfurous acid. By Franck. May 4, 1940. In German.	1.50
8260-8276 PB L 70179	Experiences with bolts on pipe connections. Apr 1, 1940. In German.	2.00
8277-8295 PB L 70179	Advantages of the plastic "Igelit PCU" as a substitute for rubber- and leather drive belts. By Hartung. Nov 12, 1942. In German.	2.00

8296-8324 PB L 70179 Repair of worn conveyor chains. Sep 9, 1942. In German. 3.00

8325-8523 PB L 70179 The geometry of worm gear systems. By Meskat and others. Dec 7, 1944. In German. 20.00

8524-8530 PB L 70179 A new electric-pneumatic control system. By Weis. Sep 15, 1940. In German. 1.50

8531-8532 PB L 70179 Discussion on purity testing of oxygen and nitrogen. By Engel. May 5, 1939. In German. 1.50

8533-8537 PB L 70179 Measurement of bearing pressures. By Röver. Mar 25, 1943. In German. 1.50

8538-8540 PB L 70179 Interchange of experiences on transmissions, with roller bearings. n.d. In German. 1.50

8541-8544 PB L 70179 Interchange of experiences on porcelain pipe lines. Jan 10, 1938. In German. 1.50

8545-8547 PB L 70179 Interchange of experiences on stuffing box packings. Feb 10, 1942. In German. 1.50

8548-8557 PB L 70179 Interchange of experiences on compressed air distribution. May 15, 1940. In German. 1.50

8558-8560 PB L 70179 New glass cock for washing precipitates. By Jung. May 18, 1943. In German. 1.50

8561-8566 PB L 70179 Suggestion for preventing errors in material selection. By Speidel. Jun 7, 1938. In German. 1.50

8567-8585 PB L 70179 Experiences with high-pressure fittings. By Wessing. May 23, 1938. In German. 2.00

8586-8603 PB L 70179 Experiences with agitators in large-size tanks. Sep 13, 1943. In German. 2.00

8604-8610 PB L 70179 Stirring experiments with various agitators. Mar 5, 1942. In German. 1.50

8611-8612 PB L 70179 Stirring experiments with high-viscosity liquids. By Erb and Vos. Nov 23, 1943. In German. 1.50

8613-8620 PB L 70179 Investigations of the power consumption during the starting of agitator drives. Jun 1, 1938. In German. 1.50

8621-8623 PB L 70179 Agitating turbine and its application. Jan 26, 1943. In German. 1.50

8624-8653 PB L 70179 Calculation and evaluation of contact furnaces. Jul 4, 1942. In German. 2.00

8654-8667 PB L 70179 Acid proof masonry lining for protection of internally heated iron vessels. Oct 24-25, 1938. In German. 1.50

8668-8689 PB L 70179 Investigation of an old cellulose boiler. By R. Haas. May 29, 1937. In German. 2.50

8690-8712 PB L 70179 Investigation of an old cellulose boiler. By E. Knopf. In German. 2.50

8713-8725 PB L 70179 Acid proof masonry lining for protection of internally heated iron vessels, Part II. n. d. In German. 1.50
For Part I, see Nos 8654-8667.

PB L 70179-S. I. G. FARBENINDUSTRIE, A. G., FRANKFURT AM MAIN-HÖCHST, GERMANY. Chemical plant engineering reports. (FIAT Microfilm Reel O-40, Frames 7699-8725, abstract cards). 1937-1944. 46 p. Price: Microfilm-$1.00 - Photostat-$4.00
Brief abstracts of the individual items on the above reel, O-40, PB 70179, prepared by FIAT personnel in Germany.

PB L 6355-S. LOCKE, E. G. and SAEMAN, J. F. Description of the production of active carbon from charcoal. (Supplement to PB 6355). (FIAT Final Rept 444, Supp.). Sep 1945. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00
This document (German original and English translation) is a supplement to the report on the "Wood carbonization industry of Germany" (see Bibliography, vol. 1, p. 475). Materials, equipment and process of the Brilonwald Reichert plant are described.

PB L 6355-S-3. SZAMATOLSKI, HUGO, APPARATE G.M.B.H. A technical drawing. (Supplement to PB 6355). (FIAT Final Rept 444, Supp.). 1936. 12 p. Price: Microfilm-$1.00 - Photostat-$1.00
This drawing, a supplement to the report on the "Wood carbonization industry of Germany" (see Bibliography, vol. 1, p.475), gives information on a certain gas heater. It will reproduce poorly.

PB L 6355-S-4. SCHUSS, GEBRÜDER, A.G., SIEGEN, GERMANY. Two drawings. (Supplement to PB 6355). (FIAT Final Rept 444, Supp.). May 1935. 22 p. Price: Microfilm-$1.00 - Photostat-$2.00
This document, a supplement to the report on the "Wood carbonization industry of Germany" (see Bibliography, vol. 1, p.475) consists of two drawings, one of which describes a certain retort. The other is a diagram of a carbonization installation of the Hiag-Verein Holzverkohlungs-Industrie G.m.b.H.

PB L 6355-S-5. FELLNER & ZIEGLER, G.M.B.H., MASCHINEN-FABRIK - APPARATEBAU, FRANKFURT AM MAIN, GERMANY. Five drawings. (Supplement to PB 6355). (FIAT Final Rept 444, Supp.). Apr 1939. 60 p. Price: Microfilm-$2.25 - Photostat-$6.00
These drawings, a supplement to the report on the "Wood carbonization industry of Germany" (see Bibliography, vol. 1, p. 475), give additional information on a certain furnace.

PB L 6355-S-6. DEUTSCHE GOLD UND SILBER SCHEIDENSTALT VORMALS ROESSLER, FRANKFURT AM MAIN, GERMANY. A technical drawing. (Supplement to PB 6355). (FIAT Final Rept 444, Supp.). Sep 1943. 16 p. Price: Microfilm-$1.00 - Photostat-$2.00
This drawing, a supplement to the report on the "Wood carbonization industry of Germany" (see Bibliography, vol. 1, p.475) gives information on the installation of a certain furnace and boiler.

PB L 6355-S-7. BÜTTNER-WERKE A. G., UERDINGEN, GERMANY. Four technical drawings. (Supplement to PB 6355). (FIAT Final Rept 444, Supp.). Dec 1938. 71 p. Price: Microfilm-$2.75 - Photostat-$8.00
These drawings, a supplement to the report on the "Wood carbonization industry of Germany" (see Bibliography, vol. 1, p. 475) give information on the wood drying installation of the Südholag, Regensburg.

Miscellaneous Chemicals

* PB L 80401. ADAMS, D. A. W. and BAIR, W. Some miscellaneous organic intermediates and products: Manufacture

(mainly) by I. G. Farbenindustrie. (BIOS Final Rept 1154, Item 22). Sep-Oct 1946. 47 p. Price: Microfilm-$1.00 - Photostat-$4.00

Data has been provided on the manufacture of a number of miscellaneous organic chemicals which cannot be very suitably characterized under any suitable "user" heading. The information was obtained from various I. G. factories (Ludwigshafen, Leverkusen, Uerdingen, and Höchst) and in one case from the Gesellschaft für Teerverwertung, Duisburg. Following is a listing of the products: acetophenone; benzylphenol; benzylsulfanilic acid; Blankophor B; Catechol; chloroacetic acid; 4-chlorobenzaldehyde-2-sulfonic acid; β-chloroethanesulfonic acid sodium salt; 4-chlorotoluene-2-sulfonic acid; cyanacetamide; cyanogen chloride; cyanuric acid; dibenzyl sulfide; dibenzyl sulfoxide; 2,4-dichlorophenol; diethylamine; diethylenetriamine; dihydroxydiphenyl sulfone; 2,4-dimethyl phenol; diphenylolpropane; isododecylphenol; epichlorohydrin; ethanolamines (mono-,di-, and tri-); ethylenediamine; ethylenimine; ethylene oxide; glycerol mono- di-chlorohydrin; 8-hydroxyquinoline; Lumweiss R; octadecylsuccinic anhydride; pentachlorophenol; phenylisocyanate; β-phenylethyl alcohol; phenylmercury acetate; polyglycerol; Preventol Flussig I Preventols N, O, and ON; propylene polymers; resin from triisopropylbenzyl chloride; trichlorophenol; triethylenetetramine; triisopropylbenzene; and triisopropylbenzylchloride.

PB L 74267. BAYREUTH, GERMANY. SCIENTIFIC LIBARAY. Chemical research reports and monographs. (FIAT Micro-Film Reel D 336, Frames 7478-8303) 1938-1941. 825 f. Price: Microfilm-$6.00 - Enlargement print-$82.50.

This FIAT microfilm reel consists of 37 items in the field of chemical technology and physical chemistry. The material was obviously seized in the above institute. Individual items are listed below and will be available as enlargement prints. The entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In Russian.

Frames	Title	Price
7478-7730 PB L 74267	"The heating technique in the production of thin-walled ceramics." By I. A. Bulavin. 1938. In Russian. The construction and operation of kilns for roasting the starting material as well as various processes of drying and types of drying tunnels are described in detail.	$25.50
7731-7922 PB L 74267	"Metallurgy of lead." By V. Ya. Mostovich and S. N. Anisimov. 1940. In Russian.	19.50
7923-7931 PB L 74267	Academician N. S. Kurnakov, as founder of the physicochemical analysis and chief of a school of science. By G. G. Urazov. 1941. In Russian.	1.50
7931-7939 PB L 74267	List of Kurnakov's publications during 1880-1940. In Russian.	1.50
7940-7941 PB L 74267	List of dissertations prepared by students of the College of Engineering under the direction of N. S. Kurnakov. n.d. In Russian.	1.50
7942-7946 PB L 74267	Kurnakov's work on the topology of the chemical diagram. By V. Ya. Anosov. 1941. In Russian.	1.50
7947-7954 PB L 74267	Kurnakov's work on metal alloys. By Pogodin. 1941. In Russian.	1.50
7955-7972 PB L 74267	Kurnakov's work in the field of physicochemical analysis of organic substances. By N. N. Efremov. 1941. In Russian.	2.00
7972-7975 PB L 74267	Kurnakov's work on the chemistry of solid and molten salts. By A. Bergmann. 1941. In Russian.	1.50
7976-7980 PB L 74267	List of anhydrous systems of salts studied by Kurnakov's school. By Bergmann. 1941. In Russian.	1.50
7981-7987 PB L 74267	Kurnakov's work in the field of aqueous solutions of salts. By Ravich. 1941. In Russian.	1.50
7987-7995 PB L 74267	Kurnakov's work on the physicochemical analysis of minerals and ores. By Rode. 1941. In Russian.	1.50
7995-7997 PB L 74267	Kurnakov's work on complex compounds. By Chernyaev. 1941. In Russian.	1.50
7997-8001 PB L 74267	The thermodynamic surfaces of one-component systems. By Mlodzeevski. 1941. In Russian.	1.50
8001-8011 PB L 74267	Methods of representation of six-component and higher systems by projections of regular polydimensional diagrams. By Radishchev. 1941. In Russian.	$ 1.50
8012-8020 PB L 74267	Thermographic method of determining the solid phases on various points of multicomponent systems. By Berg and Yanateva. 1941. In Russian.	1.50
8021-8026 PB L 74267	The form of the isotherms of the viscosity of rational and irrational binary liquid systems. By Trifonov. 1941. In Russian.	1.50
8027-8030 PB L 74267	Electric conductivity of the sulfuric acid-water system. By Ust-Kachkintsev and Zhdanov. 1941. In Russian.	1.50
8030-8039 PB L 74267	Solid solutions in systems of di-substituted benzene derivatives. By Vinogradova and Efremov. 1941. In Russian.	1.50
8039-8043 PB L 74267	The isotherms of the solubility of naphthalene in mixtures of triphenylmethane and benzene. By Khaishbashev. 1941. In Russian.	1.50
8043-8049 PB L 74267	The effect of the rate of deformation and temperature on the plasticity of magnesium alloys. By Gubkin and Savitski. 1941. In Russian.	1.50
8049-8054 PB L 74267	Iron-aluminum alloys rich in iron. By Grigorev and Grusdeva. 1941. In Russian.	1.50
8055-8058 PB L 74267	The mechanical and electrical properties of solid solutions of zirconium in copper. By Pogodin and Kuguoheva. 1941. In Russian.	1.50
8059-8070 PB L 74267	Research in the field of the ternary system platinum-iron-copper. By Nemilov and Rudnitski. 1941. In Russian.	1.50
8071-8080 PB L 74267	On the ternary magnesium-aluminum-cerium alloys. By Pogodin and Mikheeva. 1941. In Russian.	1.50
8080A-8082 PB L 74267	The form of carbon in silico-chrome. By Kurnakov. 1941. In Russian.	1.50
8083-8091 PB L 74267	The speed at which gold-silver alloys dissolve in relation to the composition of the metallic phase, when brought into cyanide solutions with different oxygene contents. By Plaksin and Sinelnikova. 1941. In Russian.	1.50
8091-8102 PB L 74267	Study of the equilibrium equation $Ag_2Cl_2 + PbCl_2 \rightleftharpoons PbCl_2 + Ag_2S$ by means of the thermoanalysis and	

microstructure. By Urazov and Sokolova. 1941. In Russian. 1.50

8103-8106 PB L 74267 — Study of the equilibrium diagram of the system, lead chloride-cadmium chloride-thallium chloride. By Bergmann and Tapchanian. 1941. In Russian. 1.50

8108-8120 PB L 74267 — The solubility and surface of the congealed mass in the ternary system, $KF - HF - H_2O$. By Tanaev. 1941. In Russian. 1.50

8120-8127 PB L 74267 — The extent of the solid solutions of potassium phosphates and ammonium phosphates in the aqueous equilibrium system, $NH_4H_2PO_4 + KCl \rightleftarrows KH_2PO_4 + NH_4Cl$, at 0°C. By Ravich and Popova. 1941. In Russian. 1.50

8127-8131 PB L 74267 — The vapor tension of saturated solutions in the system, $NH_3 - H_3PO_4 - H_2O$, at 25°C. By Wuromtsev and Nazarova. 1941. In Russian. 1.50

8131-8138 PB L 74267 — The vapor tension and solubility, at 25°C., of ternary aqueous systems formed by potassium chlorides and sulfates and magnesium chlorides and sulfates. By Rode. 1941. In Russian. 1.50

8139-8149 PB L 74267 — Conversion of a new kind of potassium raw material to potassium chloride, binary potassium-magnesium sulfate, and potassium sulfate. By Lengauer. 1941. In Russian. 1.50

8150-8253 PB L 74267 — "Chemistry of organic silicon compounds." By B. N. Dolgov. 1933. In Russian. 10.50
The saturated and unsaturated organic compounds of silicon are fully discussed. Emphasis is placed on the terminology.

8254-8303 PB L 74267 — "Fundamentals of chemical dynamics." By Akulov. 1940. In Russian. 5.00
An attempt is made to explain the phenomena of chemical induction and autocatalysis by the changes of the phases and by "autogenesis," two phenomena combined functionally. The theoretical conclusions agreed with the results of practical application.

* PB L 80403. BLAYOCK, P. W. and ANDERSON, A. H. Vinyl acetate vapour phase process. (BIOS Final Rept 1412, Item 22). Nov 1945. 22 p. Price: Microfilm-$1.00 - Photostat-$2.00
This report describes the vapor phase process for the production of vinyl acetate at I.G. Höchst and at Dr. Alexander Wacker, Burghausen. Both processes are similar, the Höchst procedure having been based upon Burghausen patents. The reaction systems and distillation procedures are described and illustrated by flowdiagrams. The section on the Höchst process includes the preparation of the catalyst and start-up procedure. Several drawings illustrate the catalyst preparation. Production at Burghausen amounts to 200 tons per month of pure vinyl acetate. The Höchst plant has been enlarged and modernized and has capacity for 700 tons per month. For another report on the same processes at Höchst and Burghausen, see BIOS Final Report 1291, "German acetylene chemistry. Vinyl acetate monomer", PB 80576, currently abstracted in this Bibliography.

* PB L 79186. BRUNDRIT, D. and others. German acetylene chemical industry. Acetaldehyde manufacture. (BIOS Final Rept 1049, Item 22). n. d. 99 p. Price: Microfilm-$2.00 - Photostat-$7.00
An investigation was made of the method of the manufacture of acetaldehyde at the following plants: (1) Alexander Wacker G.m.b.H., Burghausen; (2) Anorgana G.m.b.H., Gendorf; (3) I.G. Ludwigshafen; (4) Lonza Werke, Waldshut; (5) A. G. für Stickstoffdünger, Knapsack; and (6) I. G. Hüls. Acetaldehyde was also manufactured at Auschwitz, and Schkopau in the Russian zone and these were not visited. However details of plant dimensions and operating conditions have been abstracted from BIOS reports on Schkopau and have been included in this survey for the sake of completeness. With one exception, acetaldehyde is manufactured in the above plants by the direct hydration of acetylene in the presence of mercuric ions. The exception to the general method is that used at Ludwigshafen where acetaldehyde is obtained by the hydrolysis of methyl vinyl ether made by the vinylation of methanol. The products of hydrolysis are acetaldehyde and methanol which can be recycled. This latter process is in its infancy and no direct comparison can be made with the conventional method, but this route does not require mercury as a catalyst and therefore one of the serious hazards of the old method is removed. The report describes the hydration of acetylene, acetaldehyde distillation, acetylene recovery, purge gas recovery, improvements to acetaldehyde processes, catalyst and catalyst reactivation, and mercury oxidation. A special report is given on the experience with rubber linings on acetaldehyde plants. Flowdiagrams are included.

* PB L 79317. BRUNDRIT, D. and TAYLOR, A. W. C. German acetylene chemical industry. Chlorinated solvents. (BIOS Final Rept 1056, Item 22). Jan 1947. 80 p. Price: Microfilm-$2.00 - Photostat-$4.00
A detailed investigation has been made of the methods and apparatus used by the German manufacturers of chlorinated solvents and the results of the investigation are given in this report. Only two factories in the British, American and French zones of occupation are engaged in the manufacture, namely, Dr. Alexander Wacker Werke, Burghausen and I. G. Rheinfelden. The technique in both factories is very similar and, with one exception, line diagrams of the plants published in this report are based on the technique at the Wacker Werk which is considered superior to that at I. G. Rheinfelden. The exception is the plant for the manufacture of symetrical transdichloroethylene, the process at Rheinfelden being unique. The report discusses the production of tetrachloroethane, dichloroethylene, penta- and perchloroethylene, hexachloroethane. Hexachlorobutadiene is made at Burghausen by the polymerization of trichloroethylene to hexachlorobutene which is then treated to give the desired compound. The report also describes the thermal cracking of tetrachloroethane, the tetrachloroethane-trichloroethylene conversion, and the production of acetylene at Rheinfelden and the purification of acetylene at Burghausen.

* PB L 79582. BRUNDRIT, D. German acetylene chemical industry. Methyl vinyl ether. (BIOS Final Rept 1292, Item 22). Apr 1947. 12 p. Price: Microfilm-$1.00 - Photostat-$1.00
The report describes the production of methyl vinyl ether at I. G. Ludwigshafen. Acetylene reacts smoothly with anhydrous methanol in the presence of anhydrous caustic potash at a temperature of 150-160° C, according to the following reaction:

$$CH \equiv CH + CH_3OK \longrightarrow CH_3O{\cdot}CH = CHK$$

$$CH_3O{\cdot}CH = CHK + CH_3OH \longrightarrow CH_3O{\cdot}CH = CH_2 + CH_3OK$$

In order to keep the methanol in the liquid phase, the reaction is carried out under a pressure of 20-22 atm. abs. To minimize the dangers from the explosive decomposition of acetylene under the reaction conditions, nitrogen is added to the system, the proportion of nitrogen present never allowed to fall below 40%. Methyl vinyl ether is recovered as a 95% azeotrope with methanol. Further purification is effected by counter current washing with cold water. A description is given of the plant and process. A flowdiagram, cost sheet and labor requirements are included.

* PB L 79306. BRUNDRIT, D. German acetylene chemical industry. Monovinyl acetylene. (BIOS Final Rept 1293,

Item 22). Apr 1947. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00

A small semi-technical plant for the manufacture of 1-2 m³/hr of pure monovinylacetylene had been run at I. G. Höchst with the object of obtaining data on which to design a larger semi-works plant. Not much progress had been made and the semi-works design was still in the discussion stage. Very little detailed information could be obtained because of the dispersal of staff under the de-nazification laws. The report describes the dimerization of acetylene in the presence of a solution of cuprous chloride. A brief description is given of the equipment used, cooling and drying, liquefier, purification and regeneration of catalyst.

*PB L 80576. BRUNDRIT, D. and TAYLOR, A.W.C. German acetylene chemical industry. Vinyl acetate monomer. (BIOS Final Rept 1291, Item 22). Mar 1947. 37 p. Price: Microfilm-$1.00 - Photostat-$3.00

The manufacture of vinyl acetate monomer has been investigated at Dr. Alexander Wacker Werke, Burghausen and at I. G. Höchst. Monovinyl acetate is prepared by the reaction of acetylene with acetic acid in the vapor phase, in the presence of zinc acetate adsorbed on activated charcoal. The reaction which is exothermic, takes place between 170° C. and 220° C., depending on the age of the catalyst. The gases after reaction are cooled, the vinyl acetate and unchanged acetic acid are condensed and the unconverted acetylene is recycled. The crude vinyl acetate-acetic acid mixture is purified by fractionation in continuous stills. The plant and process at both locations are described. At Höchst, acetylene is generated in conventional wet generators and at Burghausen in tray type dry generators. The production and purification of the acetylene at both plants is described. Flowdiagrams illustrate monovinyl acetate production. A comparative cost sheet for vinyl acetate production is also included. For another report on the same processes at Höchst and Burghausen, see BIOS Final Report 1412, "Vinyl acetate vapour phase process", PB 80403.

*PB L 79233. BRUNDRIT, D. German acetylene chemical industry: Vinyl chloride. (BIOS Final Rept 1290, Item 22). Mar 1947. 21 p. Price: Microfilm-$1.00 - Photostat-$2.00

A description is given of the production of vinyl chloride monomer at Alexander Wacker G.m.b.H., Burghausen and I. G. Rheinfelden. These plants were visited between March 18 and April 24, 1946. Vinyl chloride is made by the reaction of acetylene with hydrogen chloride in the gaseous phase and in the presence of activated charcoal impregnated with mercuric chloride or with barium chloride and mercuric chloride. The reaction is exothermic. The monomer is washed and scrubbed with caustic soda and neutralised. It is then liquified and fractionally distilled. The pure product is then transported in steel or enamel-lined steel tanks to polymerisation plants. Burghausen production at Rheinfelden is 200-250 tons per month. Flowdiagrams and process details are given. A comparative cost sheet is included.

*PB L 79230. CHILTON, L. V. and TOPF, N. E. Production of Mersol products at I. G. Farbenfabrik, Wolfen. (BIOS Final Rept 1305, Item 22). Mar 1946. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00

Some details are given of the production of Mersol at Wolfen. Mersol is made by the sulfochlorination of the hydrocarbon Mepasin using ultraviolet activation according to the following reaction:

$$C_nH_{2n+2} + SO_2 + Cl_2 \longrightarrow C_nH_{2n+1}SO_2Cl + HCl$$

The sulfochlorination takes place in Igelit lined iron reaction towers 4 m. high x 2 m. internal diameter. The reaction is operated batchwise, continuous operation having been tried and found unsatisfactory. A temperature of 25° C. is used; in no case higher than 32-33° C. The reaction time for Mersol D (82% sulfochlorinated) is 24-26 hours, for Mersol H(45% sulfochlorinated), it is 11-12 hours. The Mepasin which is supplied by Leuna is prepared by the hydrogenation of Kogasin II - a Fischer-Tropfsch hydrocarbon, having a boiling range 230°-320°. This is fully saturated, almost entirely straight-chain, and contains 0.2% or less of oxygen-containing compounds. The process described in this report is similar to the Leuna process, described in CIOS File XXXII-107, p. 101-103, PB 6650, v. 1, p. 570, this Bibliography.

*PB L 79314. CLOUGH, H. Synthetic phenol, salicylic acid and developments in intermediates. Interrogation of Dr. Boehme of I. G., Leverkusen. (BIOS Final Rept 1246, Item 22, 30). n. d. 12 p. Price: Microfilm-$1.00-Photostat-$1.00

Dr. Boehme was interrogated concerning certain points of manufacture which were not brought out in previous investigations. Much of the information is of a very general nature since Dr. Boehme was not too familiar with details of the processes in question. The report deals with the sulfonation and chlorination routes in the production of synthetic phenol, the manufacture of salicylic acid from sodium phenolate and carbon dioxide, and the production of intermediates. For a previous report on these processes, see BIOS Final Report 664, "I. G. Farbenindustrie Leverkusen. Salicylic acid, sodium salicylate, synthetic phenol." PB 49272, v. 5, p. 98, this Bibliography.

*PB L 79298. DENNIS, N. and TAYLOR, A.W.C. German acetylene chemical industry. Ethylene from acetylene, coke-oven gas and ethane. (BIOS Final Rept 1058, Item 22, 30). Jan 1947. 100 p. Price: Microfilm-$2.00 - Photostat-$7.00

Ethylene was manufactured at Anorgana G.m.b.H., Gendorf and at I.G. Ludwigshafen and Hüls, by the hydrogenation of acetylene. For this purpose extremely pure acetylene was necessary and normal methods of purification of acetylene for use in chemical reactions were inadequate. At Hüls, a method of purification (not reported here) by low temperature fractionation was resorted to. At Gendorf and Ludwigshafen, a wet washing system was installed, followed by purification over active charcoal. The two systems were identical in principle and almost identical in detail. These systems are reported. The report describes the preparation and the purification of ethylene. Operating costs are given. Included in the description of the separation plants is some information on the separation of crude ethylene mixtures from coke oven gas fractions. Information on the oxygen and thermal cracking of ethane to ethylene is included. A final section reproduces a German report on the drying of ethylene and a German document on the operation of the Linde ethylene units at Gendorf. Flowdiagrams, tables and photographs are included.

PB L 52011. GERMANY, REICHSAMT FÜR WIRTSCHAFTSAUSBAU. Chemische Berichte, Feb 1942. Cooperative group for the surface improvement of metals. Second meeting: Surface protection by means of paints, Jan 31, 1941. Feb 1942. 59 p. Price: Microfilm-$2.00 - Photostat-$4.00

Abstracts of the papers follow. The papers will be available in photostat form. Please include PB and page numbers when ordering individual items. In German.

Pages	Title	Price
80 PB L 52011	Instructions. In German. This page contains 9 administrative rules and instructions for the meetings of the cooperative groups to facilitate research for the "four year plan." These meetings were sponsored by the "Reichsamt für Wirtschaftsausbau Berlin." (Reich office for economic development).	$1.00
81-82 PB L 52011	List of participants. In German. The names of the representatives of various governmental agencies, industrial enterprises, universities, etc., who were present at the meeting are listed.	1.00
83 PB L 52011	Opening remarks. In German. The purpose of the various cooperative	1.00

groups in general and the importance of surface protection are stated.

85-92
PB L 52011
WAGNER, HANS (Technische Hochschule, Stuttgart). Mechanism of pigment action. In German. 1.00
Knowledge of ion permeability is most important. Complete freedom from pores cannot be achieved with a paint film, and it is suggested the surface be treated with passivating solutions (phosphating). Lead pigments in fatty oils are best for rust-inhibitions. To save lead it is recommended that active lead pigments be combined with low-lead pigments. Complete avoidance of lead is not recommended. Some consideration is given the electrochem. action of pigments, and various lead-free pigments contg. Al or Fe are evaluated with respect to lead colors. The importance of selecting appropriate base coats for the desired top coat is emphasized. Note is made of methods of evaluating rust-inhibiting pigments, and the importance of the water or electrolyte content of the pigment and binder is brought out. Factors, as thickness, oil needed and grain size of pigments which must be considered in a final choice are enumerated.--From Chemical Abstracts.

93-103
PB L 52011
EIGENBERGER, E. (Deutsche Technische Hochschule, Prague). Linseed-oil drying. In German. 1.00
The drying of linseed oil is analyzed in order to obtain an insight into the interaction of the factors which lead to effective rust prevention. For this purpose the following factors are studied: Autooxidation of the triglycerides, formation of peroxides, the period of induction which can be observed in the autooxidation processes, formation of films, processes of consolidation, pigment content, oxidative decomposition, adhesive power, and presence of binders.

104-106
PB L 52011
WACHHOLTZ, F. (Technische Hochschule, Berlin). Rapid testing methods. In German. 1.00
This is an excerpt from a lecture delivered by F. Wadholtz from the "Institute for Plastic Materials and Research on Paints," in which the so-called rapid or short testing methods used in quality control are criticized.

107-124
PB L 52011
ROSSMANN, ERNST (I. G. Farbenindustrie, A. G., Ludwigshafen). Industrial experiences with accelerated testing methods. In German. 2.00
Accelerated testing methods for paints are critically reviewed including tests for film strength, cold strength, adherence, hardness, sensitivity to water, deterioration, rust prevention, and porosity.--From Chemical Abstracts.

125-133
PB L 52011
JORDAN, OTTO (I. G. Farbenindustrie, A. G., Ludwigshafen). The relation between base metal and film as a basis for the corrosion-preventive action of protective coatings. In German. 1.00
Porosity, permeability to water and steam, condition of the metal surface, passivation with phosphoric acid, the reactions at the surface: protective film junction, the influence of the binder, the substitution of synthetic binders, and protection in sea water and of milk cans are considered.--From Chemical Abstracts.

134-139
PB L 52011
Discussion. In German. 1.00
The various problems arising during the discussion of the above lectures and the critical remarks and the supplementary suggestions made are summarized.

PB L 52018. GERMANY, REICHSAMT FÜR WIRTSCHAFTSAUSBAU. Chemische Berichte Sept. 1942. First meeting of the cooperative group for rubber, June 19, 1942. Sep 1942. 61 p. Price: Microfilm-$2.00 - Photostat-$5.00.
Abstracts of the papers follow. The papers will be available in photostat form. Please include PB and page numbers when ordering individual items. In German.

Pages	Title	Price
882 PB L 52018	Instructions. In German. This page contains 9 administrative rules and instructions for the meetings of the cooperative groups to facilitate research for the "four year plan." These meetings were sponsored by the "Reichsamt für Wirtschaftsausbau, Berlin" (Reich office for economic development).	$ 1.00
883-884 PB L 52018	List of participants. In German. The names of the representatives of various governmental agencies, industrial enterprises, universities, etc., who were present at the meeting, are listed.	1.00
885 PB L 52018	Opening remarks. In German. General viewpoints are stressed in connection with the new research institution for rubber which will be established in Hannover.	1.00
887-890 PB L 52018	HASE, R. (Technische Hochschule, Hannover). The scientific problems of the rubber industry in the working program of the Technische Hochschule, Hannover. In German. The organization of the German Institute for Rubber Research is outlined. Research work should be performed along the following lines: (1) The production of rubber; (2) testing and processing of rubber; (3) quality analysis of the finished products; and (4) rubber as a new element for constructive purposes. The author mentions special features which are of interest in each of the four groups. The titles of 18 research projects carried out in the above institution are listed.	1.00
891-912 PB L 52018	ECKELL, J. (Berlin). The utilization of butadiene rubbers in Greater Germany and in Europe. In German. Statistics on international production and consumption of natural rubber and on its imports into European countries are surveyed, followed by descriptions of properties, testing methods, uses, and prices of Buna S or SS (butadiene - styrene copolymers).	2.00
913-916 PB L 52018	ASSBROICHER, H. (Continental Gummiwerke A. G., Hannover). Development of the rubber industry and its importance for the Germany economy. In German. The various uses of rubber in peace and war time are described in great detail.	1.00

917-929
PB L 52018 MAUL, J. (Metzeler Gummiwerke A. G., Munich). Problems of chemical technology encountered in the processing of the German butadiene rubbers. In German. 1.00
The main problems discussed in this lecture are degradation of Buna; preparation of mixtures; prevention of cyclization; plasticity, elasticity, adhesive power and weldability of the mixtures; search for standard types and molecule-forming methods; and the processing of latex.

930-933
PB L 52018 TEISCHINGER, E. (Phoenix A. G., Hamburg-Harburg). Establishment of the most favorable equilibrium conditions between plastic and elastic components of butadiene rubber. In German. 1.00
The importance of the continental type of deformation-measuring device, and Höppler's viscosimeter and consistometer for control in the production of satisfactory Buna mixtures is stressed. Problems arising in practical work in this line are indicated.

934-942
PB L 52018 KONRAD, E. (I. G. Farbenindustrie, A. G., Leverkusen). The chemistry of synthetic rubber. In German. 1.00
After enumeration of six processes for the production of butadiene, methods for its polymerization are discussed. The alkali metal polymerization and the emulsion polymerization are of chief technical importance. Theory and practice of the reactions and the materials used are described in great detail.

PB L 70249. I. G. FARBENINDUSTRIE A. G., FRANKFURT-HÖCHST. A collection of reports in the field of organic chemistry. (FIAT Microfilm Reel A-26, Frames 2938-3772) 1940-1944. 834 f. Price: Microfilm-$6.00 - Enlargement Print-$83.50
This FIAT microfilm reel consists of 100 items in the field of organic chemistry. Individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
2938-2944 PB L 70249	Detailed experiments for preparing hexogen from white salts (preliminary product for explosives). Comparison of the effect of white salts precipitated with methanol and those prepared by the Nubilosa process. By Langbein. 1940. In German.	$1.50
2945-2949 PB L 70249	Experiments concerning the production of nitromethane. 1940. In German.	1.50
2950-2952 PB L 70249	Separation of the azeotropic mixture of aniline and phenol (58:42) by fractional distillation with water. By Petri. 1940. In German.	1.50
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3015-3024 PB L 70249	Behavior of mixtures of commercial polyvinyl alcohol and water. By Brandel. 1940. In German.	1.50
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3048-3054 PB L 70249	Removal of arsenic from sulfur obtained by thermal treatment of pyrites. 1940. In German.	1.50
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3084-3093 PB L 70249	Condensation of acetaldehyde with subsequent hydrogenation to compounds soluble in water and compounds insoluble in water, particularly polyhydroxy compounds ("Oxiol"). By Berndt. 1940. In German.	1.50
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3107-3118 PB L 70249	Acryl and methacryl amides and acrylic and methacrylic esters. By Corell. 1940. In German.	1.50
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3135-3140 PB L 70249	Preparation of β-chloropropionyl chloride and γ-chloroisobutyryl chloride, and their reactions. By Schmidt. 1940. In German.	1.50
3141-3148 PB L 70249	Copolymers from vinyl chloride and vinyl acetate with higher K values (pressure polymerization). By Sönke and Overbeck. 1940. In German.	1.50
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3175-3182 PB L 70249 — New possibilities for using anthracene. By Kränzlein. 1941. In German. 1.50

3183-3186 PB L 70249 — 3,3'-di-(trifluoromethyl)-indanthrone and its tetrasulfuric esters. By Schlichemeier. 1941. In German. 1.50

3187-3191 PB L 70249 — Some derivatives of anthraquinone-2-aldehyde. 1941. In German. 1.50

3192-3194 PB L 70249 — Substituted 1-aminoanthraquinones as bases for "Naphthol AS" dyes. 1941. In German. 1.50

3195-3198 PB L 70249 — Vat dyes from ring ketones of acenaphthene. By Sieber. 1941. In German. 1.50

3199-3215 PB L 70249 — Analysis of mixtures of liquids by quantitative fractionation. By Blumrich. 1941. In German. 2.00

3216-3223 PB L 70249 — Production of α-substituted aliphatic carboxylic acids, particularly diethylacetic acid and 2-ethylcaproic acid. By Berndt. 1941. In German. 1.50

3224-3225 PB L 70249 — Regeneration of lead dioxide. By Besler. 1941. In German. 1.50

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3232 PB L 70249 — "Helindongelb CG." By Marschall. 1941. In German. 1.50

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3234 PB L 70249 — Experiments in a boiler lined with ferrosilicon plates. By Sieber. 1941. In German. 1.50

3235-3242 PB L 70249 — Pyrogenic behavior of methyl and ethyl halides. By Dachlauer. 1941. In German. 1.50

3243-3247 PB L 70249 — Six months' experience with a Fischer furnace (vinyl acetate). By Himmler. 1941. In German. 1.50

3248-3272 PB L 70249 — Studies performed at the carbon monoxide laboratory (cobalt catalysts). By Sieglitz. 1941. In German. 3.00

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3309-3310 PB L 70249 — Condensation products from aromatic hydrocarbons and formaldehyde. 1941. In German. 1.50

3311-3320 PB L 70249 — New methods of producing derivatives of vinyl acetylene, and their polymerization. 1941. In German. 1.50

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3329-3335 PB L 70249 — Highly viscous polyvinyl chlorides. By Sönke. 1941. In German. 1.50

3336-3338 PB L 70249 — Production of reversible emulsion powders. By Starck. 1941. In German. 1.50

3339-3340 PB L 70249 — New emulsifying agents for emulsion polymerization. By Starck. 1941. In German. 1.50

3341-3347 PB L 70249 — Stabilization of plastics. By Sönke and Overbeck. 1941. In German. 1.50

3348-3351 PB L 70249 — New plasticizers. By Müller and Keller. 1941. In German. 1.50

3352-3380 PB L 70249 — Pilot plant experiments for the catalytic production of chloromethyl. By Dachlauer. 1941. In German. 3.00

3381-3393 PB L 70249 — Continous process for producing crotonic acid. By Leupold. 1942. In German. 1.50

3394-3407 PB L 70249 — Alkaline decomposition of lignin or wood with simultaneous hydrogenation, and the technical application of the products thus obtained. By Berndt. 1942. In German. 1.50

3408-3412 PB L 70249 — Recovery of acetonitrile by extraction of an aqueous solution by means of methylene chloride. By Dachlauer. 1942. In German. 1.50

3413-3418 PB L 70249 — Vat dyes containing trifluoroethoxy groups. By Scherer. 1942. In German. 1.50

3419-3420 PB L 70249 — Benzene-2-phenoxy-benzanthrone. By Zahn. 1942. In German. 1.50

3421-3425 PB L 70249 — Dioxazine dyes with carboxylic arylamide groups. 1942. In German. 1.50

3426-3428 PB L 70249 — Substituted 1-amino-anthraquinones as bases for "Naphthol AS" dyes. By Müller. 1942. In German. 1.50

3429-3430 PB L 70249 — New method of preparing 1-hydroxy-3-aminoanthraquinone. By Heyna. 1942. In German. 1.50

3431-3431a PB L 70249 — "Aminomazapyren" (3-(N),4-pyridinopyrene) prepared from a mixture of 3-nitro and 3-amino pyrene with glycerol and concentrated sulfuric acid. By Thiess. 1942. In German. 1.50

3432-3441 PB L 70249 — Azole derivatives of naphthalic acid. By Wilke. 1942. In German. 1.50

3442-3449 PB L 70249 — Detection of impurities, particularly ethylene oxide derivatives, in commercial vinyl acetate. By Blumrich and Bandel. 1942. In German. 1.50

3450-3451 PB L 70249 — Comparative testing of some fire extinguishing fluids. By Dachlauer. 1942. In German. 1.50

3452-3455 PB L 70249 — Flame choking effect of various gases and vapors. By Dachlauer. 1942. In German. 1.50

3456-3458 PB L 70249 — Detection of "Mesapon N." 1942. In German. 1.50

3459-3466 PB L 70249 — Detection of "Leonil O" and similar substances. In German. 1.50

3467-3473 PB L 70249 — Extinguishing fires in the presence of calcium carbide, using carbon tetrachloride or fire extinguisher "CB." By Dachlauer. 1942. In German. 1.50

3474-3500 PB L 70249 — Catalytic production of chloromethyl by hydrolysis of tetrachloroethane with dimethyl ether or methanol. By Dachlauer. 1942. In German. 3.00

3501-3506 PB L 70249 — Preparation of β-chloroisobutyryl chloride from isobutyric acid. 1942. In German. 1.50

3507-3531 PB L 70249 — Nickel zinc oxide catalysts for producing glycerogen. By Fuchs. 1942. In German. 1.50

3532-3535 PB L 70249 — Emulsion copolymers on the basis of vinyl chloride. Vinyl chloride maleic anhydride. By Sonke. 1940. In German. 1.50

3536-3549 PB L 70249 — Preservation of vegetables in the plant, for 1942. 1943. In German. 1.50

3550-3571 PB L 70249 — Photochemical chlorination of methane, methyl chloride, methylene chloride and chloroform. By Dachlauer. 1943. In German. 2.50

3572-3583 PB L 70249 — Determination of the electrical resistance of coke powders. 1942. In German. 1.50

3584-3586 PB L 70249 — Influence of oxygen on methanol chlorination (in the absence of catalysts). By Petri. 1942. In German. 1.50

3587-3593 PB L 70249 — Urethanes containing sulfo and carboxyl groups on the basis of oxo alcohols. By Lampert. 1943. In German. 1.50

3594-3595 PB L 70249 — Production of "Igepon" brands in a single operation. By Frank. 1943. In German. 1.50

3596-3600 PB L 70249 — The heat of solution of sulfuric anhydride in sulfuric acid and oleum. 1943. In German. 1.50

3601-3610 PB L 70249 — Various methods of determining hydrophobing effects. 1943. In German. 1.50

3611-3621 PB L 70249 — Bifunctional products in the textile industry. By Wagner. 1943. In German. 1.50

3622-3627 PB L 70249 — Experiments for the manufacture of "Derminol-Licker." By Schäfer. 1943. In German. 1.50

3628 PB L 70249 — Chlorination of melamine. 1943. In German. 1.50

3629-3630 PB L 70249 — Preparation of 1,3,6,8-diphenylamine sulfone tetrasulfonic acid. By Thiele. 1943. In German. 1.50

3631-3634 PB L 70249 — New sulfonamide derivatives and new uses for sulfamides. By Paguin. 1943. In German. 1.50

3635-3649 PB L 70249 — Peace time use of the plastic products of Höchst. 1940. In German. 1.50

3650-3655 PB L 70249 — Present and future substitution of dispersions of plastics for linseed oil. 1943. In German. 1.50

3656-3667 PB L 70249 — Paper sizing without rosin. By Langbein and Horn. 1943. In German. 1.50

3668-3673 PB L 70249 — New studies in the field of plasticizers. By Sieglitz. 1943. In German. 1.50

3674-3681 PB L 70249 — Photochemical chlorination of methane and methyl chloride in the gas phase. By Hilcken and Petri. 1943. In German. 1.50

3682-3686 PB L 70249 — Degree of charge of pressure vessels for mixtures of "CB" and carbon dioxide serving as fire extinguisher. By Blumrich. 1943. In German. 1.50

3687-3707 PB L 70249 — Chloroprene peroxide and its influence on the emulsion polymerization of chloroprene. By Kern. 1943. In German. 2.50

3708-3719 PB L 70249 — Phenol process of Höchst (aniline phosphoric acid process). By Pitsky. 1944. In German. 1.50

3720-3727 PB L 70249 — The tanning materials produced at Höchst. By Koch. 1944. In German. 1.50

3728-3749a PB L 70249 — Production and storage of chloroprene. By Jockusch. 1944. In German. 2.50

3750-3772 PB L 70249 — Present state of the emulsion polymerization of chloroprene. By Seydel. 1944. In German. 2.50

PB L 70249-S. I. G. FARBENINDUSTRIE A. G., FRANKFURT-HÖCHST. A collection of reports in the field of organic chemistry. (FIAT Microfilm Reel A-26, Frames 2938-3772, abstract cards) 1940-1944. 97 p. Price: Microfilm-$2.00 - Photostat-$7.00
These are short abstracts of the items on reel A-26 (PB L 70249) described above. They were prepared by FIAT abstracters in Germany.

PB L 74067. I. G. FARBENINDUSTRIE A. G., FRANKFURT AM MAIN, GERMANY. Dyes and textile auxiliaries: Production methods. (FIAT Microfilm Reel CC-122, Frames 1-851) 1946 (?). 851 f. Price: Microfilm-$6.00 - Enlargement Print-$85.50
This FIAT microfilm reel contains information on various chemical products, as described below. The 364 individual items listed will be available as enlargement prints only. When ordering them please include PB and frame numbers. These reports are in English; apparently written in 1946.

Frames	Title	Price
1-11 PB L 74067	Tables: General information concerning plant production capacity. 110 products are listed by their chemical names, trade names, and composition. Statistical data as to their production from 1937-1941 are given. They are assigned	$1.50

Miscellaneous Chemicals (contd)

numbers which appear in the process descriptions below.

12-15 PB L 74067 — Crystal fuchsine. (4,4',4''-triamino-3-methyl-triphenyl-carbinol hydrochloride) 1.50

Beginning with this item, and for all items below except the statistical tables, a description of the process and requirements for the chemical in question are given. This includes raw materials, intermediates, apparatus, tests to be carried out, etc. The principal uses, and by-products, if any, are indicated.

16-17 PB L 74067 — Acid fuchsine O. (Ammonium-4,4',4''-triamino-3-methyl-triphenyl-carbinol-trisulfonate) 1.50

18-20 PB L 74067 — Acid fuchsine O potassium salt. (Potassium salt of the trisulfonic acid of 4,4',4''-triamino-3-methyl-triphenyl-carbinol-trisulfonate) 1.50

21-22 PB L 74067 — Leather brown BY. (Acridine derivative of unknown constitution) 1.50

23-26 PB L 74067 — Phosphin E. (Diamino-methyl-phenyl acridine hydrochloride) 1.50

27-28 PB L 74067 — Leather yellow 3 G. (Mixture of hydrochlorides of several acridines) 1.50

29-30 PB L 74067 — Reflex blue K. (Sulfonic acid of a phenylated p-rosaniline) 1.50

31-33 PB L 74067 — Reflex blue RB extra powder. (Sulfonic acid of o-tolyl-p-rosaniline) 1.50

34-36 PB L 74067 — Reflex blue 8 R extra powder. (Sulfonic acid of a phenyl-substituted rosaniline) 1.50

36-38 PB L 74067 — Reflex blue TBK extra. (Mixture of the sulfonic acids of o-tolyl-p-rosaniline and phenyl-p-rosaniline with barium sulfate and barium abietinate) 1.50

39-41 PB L 74067 — Blue II spirit soluble. (Hydrochloride of a phenyl rosaniline) 1.50

42-45 PB L 74067 — Blue II extra greenish. (Hydrochloride of a phenylated rosaniline) 1.50

46-48 PB L 74067 — Blue R spirit soluble. (Hydrochloride of a phenyl-substituted rosaniline) 1.50

49-51 PB L 74067 — Spirit blue T, "Bleu de Lyon O." (Hydrochloride of a phenyl-substituted rosaniline) 1.50

52-55 PB L 74067 — Para blue spirit soluble. (Hydrochloride of a phenylated rosaniline) 1.50

56-57 PB L 74067 — Alkali blue 4. (Sodium salt of the sulfonic acid of a phenyl-p-rosaniline) 1.50

58-59 PB L 74067 — Alkali blue HE. (Sodium salt of the sulfonic acid of a phenylated p-rosaniline) 1.50

60-62 PB L 74067 — Alkali violet extra A. (Sodium salt of the sulfonic acid of a phenyl-rosaniline) 1.50

63-65 PB L 74067 — Bronze blue G extra in paste. Aqueous paste of the sulfonic acid of a phenylated p-rosaniline) 1.50

66-68 PB L 74067 — Bronze blue R extra paste. (Same definition as previous item) 1.50

69-71 PB L 74067 — Reflex blue AG. (Sulfonic acid of a phenylated p-rosaniline ground with varnish) 1.50

72-73 PB L 74067 — Reflex blue B. (Sulfonic acid of a phenylsubstituted rosaniline) 1.50

74-76 PB L 74067 — Reflex blue GG extra powder. (Sulfonic acid of an m-tolyl-p-rosaniline) 1.50

77-78 PB L 74067 — Reflex blue 8 G. (Sulfonic acid of a phenylated rosaniline) 1.50

79-80 PB L 74067 — Blue BSC. (Sodium salt of the sulfonic acid of a phenyl-p-rosaniline) 1.50

81-83 PB L 74067 — Blue BWB. (Sodium salt of the sulfonic acid of a phenylated rosaniline) 1.50

84-85 PB L 74067 — Opal blue, blueish. (Sodium salt of the sulfonic acid of a phenyl-rosaniline) 1.50

86-88 PB L 74067 — Pure blue BSPPA 9 S. (Ammonium salt of the sulfonic acid of a phenyl-p-rosaniline) 1.50

89-90 PB L 74067 — Silk blue BTSB. (Sodium salt of the sulfonic acid of a phenylated p-rosaniline) 1.50

91-92 PB L 74067 — Soluble blue IN. (Sodium salt of the sulfonic acid of a phenyl-p-rosaniline) 1.50

93-95 PB L 74067 — Soluble blue R. (Sodium salt of the sulfonic acid of a phenyl-rosaniline) 1.50

96-97 PB L 74067 — Water blue TR. (Sodium salt of the sulfonic acid of a phenylated rosaniline) 1.50

98-101 PB L 74067 — Soluble blue I old. (Calcium salt of the sulfonic acid of a phenyl-p-rosaniline) 1.50

102-104 PB L 74067 — Ink blue BJTBN 80. (Sodium or ammonium salt of a phenyl rosaniline) 1.50

105-107 PB L 74067 — Ink blue BJTN. ("Rosaniline blue"-tetrasulfonic acid) 1.50

108-110 PB L 74067 — Alkali blue 31225. (Aqueous solution of the sodium salt of a phenyl-substituted p-rosaniline sulfonic acid) 1.50

111-113 PB L 74067. — Reflex violet. (Sulfonic acid of a phenylated rosaniline, ground with varnish) 1.50

114-115 PB L 74067 — Ink blue BJTE. (Ammonium salt of the sulfonic acid of a phenylated p-rosaniline) 1.50

116-118 PB L 74067 — Astracyamine B. (4,4'-tetrahydroxy ethyldiamino-2,2'-dimethyl-4" - rhenetidyl-triphenylmethane-hydrochloride) 1.50

119-121 PB L 74067 — Brilliantindo blue 5G. (Oxidation product of sodium-4,4'-tetrabenzyl-diamino-triphenyl-methane-2'',4''-disulfonate) 1.50

122-123 PB L 74067 — Cyanine B. (Probably sodium 4,4'-triethyl-diamino-triphenylmethane-2'',4''-disulfonate) 1.50

124-126 PB L 74067 — Cyanol FFG. (Oxidation product of sodium 4,4'-di-n-butyldiamino-3,3'-dimethyl-triphenylmethane-2'',4''-disulfonate) 1.50

127-129 PB L 74067 — Cyanol extra. (Oxidation product of the sodium salt of 4,4'-diethyldiamino-3,3'-dimethyl-triphenylmethane-2'', 4''-disulfonic acid) 1.50

130-132 PB L 74067 — Cyanol silk blue. (Sodium 4,4'-tetraethyl-diaminodiphenyl-4''-amino-naphthylmethane-3'',6''-disulfonate) 1.50

133-135 PB L 74067 — Guinea fast green B. (Oxidation product of sodium-4,4'-tetra-ethyldiamino-2'',4''-dimethyl-triphenylmethane-3'', 5''-disulonate) 1.50

136-138 PB L 74067 — Naphthalene green V. (Oxidation product of sodium (or ammonium) 4,4'-tetraethyldiamino-diphenyl-naphthylmethane-3'', 6''-disulfonate) 1.50

139-141 PB L 74067 — Patent blue AE. (Oxidation product of sodium-4,4'-diethyl-disulfobenzyl-diamino-triphenylmethane-2''-sulfonate) 1.50

142-144 PB L 74067 — Patent blue AF. (Ethyl benzyl-4,4'-diamino-triphenylmethane-2'', 4''-disulfonic acid) 1.50

145-147 PB L 74067 — Patent blue V. (Oxidation product of sodium-4,4'-tetraethyldiamino-3''-hydroxytriphenylmethane-4'',6''-disulfonate) 1.50

148-150 PB L 74067 — Patent blue V new. (Tetraethyl-4,4'-diamino-triphenylmethane-2'',4''-disulfonic acid) 1.50

151-153 PB L 74067 — Patent blue VF. (Oxidation product of sodium 4,4'-tetraethyl-diamino-triphenyl-methane-2'', 4''-disulfonate) 1.50

154-156 PB L 74067 — Sulforhodamin B extra. (Tetraethyl-diamino-phenyl-xanthylium disulfonate) 1.50

157-159 PB L 74067 — Sulforhodamine G extra. (Sodium 4,4'-diethyl-diamino-3,3'-dimethyl-phenyl-xanthylium-2'', 4''-disulfonate) 1.50

160-161 PB L 74067 — Straw blue G. (Oxidation product of 4,4'-tetraethyl-diamino-triphenylmethane-2''-sulfonic acid) 1.50

162-164 PB L 74067 — Wool fast blue FBL. (Oxidation product of sodium salt of disulfo-phenetidyl-4,4'-diamino-diphenyl-N-methyl-2''-phenyl-3-indolyl-methane) 1.50

165-167 PB L 74067 — Wool fast blue FGL. (Oxidation product of the sodium salt of disulfo-p-phenetidyl-4,4'-diamino-diphenyl-N-isobutyl-2''-p-chlorophenyl-4'', 6''-dimethyl-3''-indolylmethane) 1.50

168-170 PB L 74067 — Naphthalene green highly conc. F. (Oxidation product of ammonium-4, 4'-tetraethyldiamino-diphenyl-naphthylmethane-3'', 6''-disulfonic acid) 1.50

171-172 PB L 74067 — Neutral red extra. (Made from 2,4-diamino-toluene and p-nitro-dimethyl aniline) 1.50

173-175 PB L 74067 — Chromoxane brilliant red BL. (Sodium-4,4'-tetraethyl-diamino-phenyl-xanthylium-4''-hydroxy-2'', 5''-dicarboxylate) 1.50

176-177 PB L 74067 — Chromoxane brilliant red BD. (Sodium-4,4'-tetraethyldiamino-phenyl-xanthylium-4''-hydroxy-2'',5''-dicarboxylate) 1.50

178-180 PB L 74067 — Benzaldehyde-2,4-disulfonic acid. 1.50

181-183 PB L 74067 — Boring agent Hoechst. (Mixture of "Mopasin" compounds) 1.50

184-185 PB L 74067 — Emulphor STH. (Mixture of "Mopasin" compounds) 1.50

186-188 PB L 74067 — Derminol fat liquor. (Mixture of "Mopasin" and "Kogasin" compounds) 1.50

189-190 PB L 74067 — Bukanol oil C. ("Mopasin"-Kogasin-compound mixture) 1.50

191-192 PB L 74067 — Amido yellow E. (2,4-Dinitro-phenyl-4'-aminodiphenylamine-6'-sodium sulfonate) 1.50

193-195 PB L 74067 — Fast new blue 3 R. (Made from dimethyl-aniline and β-naphthol) 1.50

196-198 PB L 74067 — Methylene violet 3 RA. (Diethyl-safranine) 1.50

199-201 PB L 74067 — Methylene blue 1 a. (Made from dimethyl-aniline, sodium thiosulfate and sodium biehromate) 1.50

202-204 PB L 74067 — Methylene blue 2 AM. (Made from same compounds plus diethylaniline) 1.50

205-207 PB L 74067 — Methylene blue NNX. (Made from monoethyl-o-toluidine, sodium biehromate and thiosulfate) 1.50

208-210 PB L 74067 — Nile blue BX. (Made from diethyl-m-amino-phenol and ethyl-α-naphthylamine) 1.50

211-213 PB L 74067 — Safranine T extra. (Made from o-toluidine and aniline) 1.50

214-216 PB L 74067 — Acid leather brown EGB. (Made from o-toluidine and 4-nitrochloro-benzene-6-sulfonic acid) 1.50

217-219 PB L 74067 — Rhoduline sky blue 3 G; Zapon fast blue 3 G. (Made from diethyl-m-phenetidine and diethyl-m-aminophenol) 1.50

220-221 PB L 74067 — Methylene green. (Made from methylene blue, frame 199 above) 1.50

222-223 PB L 74067 — Amido naphthol brown S G. 2',6'-dinitro-4'-carboxy-phenyl-4-amino-diphenylamine-6-sulfonic acid) 1.50

224-226 PB L 74067 — Rhoduline heliotrope 3 B. (Made from amino-diphenylamine, aniline, and monomethyl-o-toluidine) 1.50

227-228 PB L 74067 — Anthralan brown 4 G. (2'-nitro-4'-sulfodiethyl amino-phenyl-4-amino-4''-acetamino-diphenylamine-6-sulfonic acid) 1.50

229-230 PB L 74067 — Fat blue Z. (4-Diethylaminophenyl-p-naphthoquinoneimine) 1.50

231-232 PB L 74067 — Igelan brown 3 G. (2'-nitro-4'-sulfomethyl anilidophenyl-4-amino-diphenylamine-6-sulfonic acid) 1.50

233-236 PB L 74067 — Sulfur black. (Made from dinitro-chlorobenzene and sodium polysulfide) 1.50

237-240 PB L 74067 — Blue base M. (m-toluyl-p-rosaniline) 1.50

241-243 PB L 74067 — Blue base RA. (Phenylated rosaniline) 1.50

244-246 PB L 74067 — Blue II T-base. (Phenyl substituted p-rosaniline) 1.50

247-249 PB L 74067 — Blue base J. (Phenylated p-rosaniline) 1.50

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Miscellaneous Chemicals (contd)

250-252 PB L 74067 — Blue base O. (o-toluyl-p-rosaniline) 1.50

253-254 PB L 74067 — Rosaniline II. (4,4',4''-triamino-3-methyl-triphenyl carbinol) 1.50

255-257 PB L 74067 — Sodium thiosulfate. 1.50

258-259 PB L 74067 — Sodium sulfide. 1.50

260-262 PB L 74067 — Tetranitrocarbazole. 1.50

263-264 PB L 74067 — Saccharin. 1.50

265-266 PB L 74067 — Mersolat. (Sodium "Mepasin" sulfonate mixed with sodium carbonate) 1.50

267-269 PB L 74067 — Derminol liquor 1 H. (Mixture of a xylene sulfonic acid and a cutting oil "Bohrmittel H8") 1.50

270-272 PB L 74067 — Derminol liquor PH. (Similar mixture) 1.50

273-276 PB L 74067 — o-Sulfobenzoic acid. 1.50

277-278 PB L 74067 — Ester salt of o-sulfobenzoic acid. (Sodium salt of its methylester) 1.50

279-280 PB L 74067 — Ethane base. (4,4'-tetraethyl-diamino-diphenylmethane) 1.50

281-282 PB L 74067 — α-Indole. (N-methyl-α-phenyl-indole) 1.50

283-284 PB L 74067 — Synthetic pyrolusite. (Aqueous paste of manganese dioxide) 1.50

285-287 PB L 74067 — Green acid. (Ethyl-benzyl-aniline sulfonic acid) 1.50

288-289 PB L 74067 — Hydrol or HS base. (4,4'-tetraethyl-diaminodiphenylmethane-sulfonic acid) 1.50

290-291 PB L 74067 — Sulfal. (o-sulfo-benzaldehyde) 1.50

292-304 PB L 74067 — Tables containing statistical information on the production of various chemicals, 1937-1941, similar to first item above (frames I-II). 1.50

305-306 PB L 74067 — Pentachloronitrobenzene. 1.50

307-309 PB L 74067 — Tritox. (Trichloroacetonitrile) 1.50

310-311 PB L 74067 — Game repellent. (Emulsion of lignite and lime in chlorinated benzene) 1.50

312-314 PB L 74067 — Mat white W. (Emulsion of titanium dioxide with binding agents) 1.50

315-316 PB L 74067 — Binding agent W. (Emulsion containing polyvinyl products) 1.50

317-318 PB L 74067 — Ureide. (Monohydroxypropylpolyethylene-diamine ureide) 1.50

319-320 PB L 74067 — Dispergamin H. (Condensation product from acetal dehyde-ammonia and urea) 1.50

321-322 PB L 74067 — Chrome mordant MG. (Chromium acetate with "Protektol II.") 1.50

323-325 PB L 74067 — Intermediate for water proofing agent 1/107. (Octadecyl-isocyanate and diaminodiphenylmethane-diisocyanate) 1.50

326-327 PB L 74067 — Intermediate for "Persistol VS." (Octadecylisocyanate) 1.50

328-330 PB L 74067 — Persistol KF. (Condensation product of octadecyl-chloromethylether and diethylamino-acetic acid methylester) 1.50

331-332 PB L 74067 — "Schablonenlack N." (for textile printing) (contains polyvinylalcohols) 1.50

333-335 PB L 74067 — "Pangelb." (Potassium salt of 2,4-disulfobenzal-2'-thioindoxyl) 1.50

336-337 PB L 74067 — Glyoxal. 1.50

338-339 PB L 74067 — Stearoyl acetic acid ethyl ester. 1.50

340-341 PB L 74067 — Propion anilide. 1.50

342-343 PB L 74067 — Sirius light blue FF2GL. (Made from sulfanilic acid and fuming sulfuric acid) 1.50

344-346 PB L 74067 — Fast golden orange GR base. (4-Trifluoromethyl-2-aminophenyl-ethyl-sulfone) 1.50

347-348 PB L 74067 — Malonic acid diethyl ester. 1.50

349-350 PB L 74067 — Dichloromethyl-m-xylene. 1.50

351-352 PB L 74067 — Camphoric acid. 1.50

353-354 PB L 74067 — Phenyl-diamido-base. (Diamino-triphenylmethane) 1.50

355-358 PB L 74067 — Tutogen new I and NK. (Mixture containing "Nekal BKS," 1,3-butylene-glycol, etc.) 1.50

359-360 PB L 74067 — Paper glue B. (Anthracene crotonic acid, cresotic acid, and methyl ether) 1.50

361-370 PB L 74067 — Statistical tables, listing raw materials and intermediates with their sources, utilities, and products 1937-1944. (Production described below) 1.50

371-374 PB L 74067 — Igepon AP. (Oleic acid ester of 2-hydroxyethane-1-sulfonic acid) 1.50

375-377 PB L 74067 — Supplement to above (361-370) tables: Listing of 27 "Igepon" textile aids, with their starting materials. Some of these aids appear individually, above and below. 1.50

378-381 PB L 74067 — Igepon T. (Mainly N-oleyl-N-methyl-1-amino-ethane-2-sulfonic acid) 1.50

382-385 PB L 74067 — Another table, listing 35 "Igepons." 1.50

386 PB L 74067 — Igepon T. (see above 378), slightly different specification. 1.50

387-389 PB L 74067 — Medialan A. (Oleyl sarcoside and oleyl-N-methyl-amino acetate) 1.50

390-391 PB L 74067 — Another table listing 14 compounds of the "Medialan" type - similar to preceding items - and their constituents. 1.50

392-393 PB L 74067 — Kaurit WF110. (Formaldehyde-formamide-condensation product) 1.50

394-395 PB L 74067 — Washing agent WO 531H. (Mainly sodium paraffin sulfonate) 1.50

Miscellaneous Chemicals (contd)

398-398 PB L 74067	Soromine DM. (Chiefly beef tallow polyglycerol ester)	1.50
399-402 PB L 74067	Soromine SGT. (Polyglycol ester of stearic acid)	1.50
403-407 PB L 74067	Persistol WS. (Chiefly stearic methylol amide)	1.50
408-410 PB L 74067	Calcium phosphite.	1.50
411-420 PB L 74067	Tables listing 88 "Igepal" and similar products and their composition, and production figures 1937-1945.	1.50
421-424 PB L 74067	Emulphor STX. (Chiefly isodecyl-m-xylenesulfonate)	1.50
425-428 PB L 74067	Igepal B. (Sulfuric acid ester of di-(isohexyl/iso-heptyl)-phenyl-penta (5) glycolester)	1.50
429-431 PB L 74067	List of 11 products similar to the preceding item.	1.50
432-434 PB L 74067	Igepal C. (Isooctylphenyldecaglycol-ether)	1.50
435-442 PB L 74067	List of 50 products similar to the preceding item.	1.50
443-445 PB L 74067	Olefine oil H. (From butadiene waste oil)	1.50
446-448 PB L 74067	Intravan BK. (Ammonium sulfate and diammonium phosphate with some salicylic acid and "Leonils."	1.50
449-451 PB L 74067	Caustic soda.	1.50
452-453 PB L 74067	Sodium amide, granulated.	1.50
454-457 PB L 74067	Powder K. (Nickel and nickeloxs oxide on pumice; for hydrogenations)	1.50
458-472B PB L 74067	Statistical tables showing production figures 1937-1945 for many items.	2.00
273-488 PB L 74067	Tables giving structural formulae of (but not processes for) 88 azo lake dyes.	2.00
489 PB L 74067	Statistical table on dye production, 1937-1945.	1.50
490-498 PB L 74067	Tables giving structural formulae of (not processes for) 48 dyes.	1.50
499-502 PB L 74067	Autol red RLP. (From α-naphthylamine and β-naphthol)	1.50
503-504 PB L 74067	Blue 4022. (From o-dianisidine and naphthol AS-BO)	1.50
505-507 PB L 74067	Bordeau pigment. (From nitro-p-anisidine and naphthol AS-D)	1.50
508-510 PB L 74067	Brown pigment L 878. (Discontinued)	1.50
511-513 PB L 74067	Red pigment for bunting cloth. (2,5-dichloroaniline and Naphthol AS)	1.50
514-516 PB L 74067	Hansa yellow A supra. (Chiefly from 2-nitro-4-toluidine and acetoacetanilide)	1.50
517-519 PB L 74067	Hansa yellow G. (From 2-nitro-4-toluidine and acetoacetanilide)	1.50
520-522 PB L 74067	Hansa yellow G transparent. (Only slightly varied process)	1.50
523-525 PB L 74067	Hansa yellow 3 G. (From 4-chloro-2-nitro-aniline and acetoacetanilide)	1.50
526-528 PB L 74067	Hansa yellow 5 G. (Acetoacetanilide coupled with o-nitroaniline and with some 2-nitro-4-toluidine)	1.50
529-531 PB L 74067	Hansa yellow 10 G. (4-Chloro-2-nitro-aniline with acetoacetic acid-2-chloroanilide)	1.50
532-534 PB L 74067	Hansa yellow GA. (From 2-nitro-4-toluidine and acetoacetanilide)	1.50
535-537 PB L 74067	Hansa yellow GE. (From 4-chloro-2-nitroaniline and acetoacetanilide, chiefly)	1.50
538-540 PB L 74067	Hansa yellow GGR extra. (Chiefly 2-nitro-4-toluidine and acetoacetanilide)	1.50
541-543 PB L 74067	Hansa yellow GH. (Same ingredients and barium sulfate)	1.50
544-546 PB L 74067	Hansa yellow GR. (From chloro-o-nitroaniline and acetoacetic acid-1,2,4-xylidine)	1.50
547-549 PB L 74067	Hansa yellow GT. (From 2-nitro-4-toluidine and acetoacetanilide)	1.50
550-552 PB L 74067	Hansa yellow 10 GT. (4-chloro-2-nitroaniline and acetoacetic-o-chloro-anilide)	1.50
553-556 PB L 74067	Hansa yellow KG. (Chiefly from 2-nitro-4-toluidine and acetoacetanilide)	1.50
557-559 PB L 74067	Hansa yellow R. (From dichloroaniline and pyrazolone)	1.50
560-562 PB L 74067	Hansa yellow 3 R. (From nitro-p-anisidine and acetoacetic o-toluidide)	1.50
563-565 PB L 74067	Hansa yellow RN. (From nitro-p-anisidine and acetoacetic 2-methoxy-anilide)	1.50
566-568 PB L 74067	Hansa red B. (From 2-nitro-4-toluidine and β-naphthol)	1.50
569-571 PB L 74067	Helio red BL. (o-toluidine and 1-naphthol-5-sulfonic acid)	1.50
572-575 PB L 74067	Bronze red C. (1-amino-3-methyl-4-chloro-benzene-6-sulfonic acid with β-naphthol)	1.50
576-577 PB L 74067	Helio Bordeaux BL. (Chiefly α-naphthyl amine and 1-naphthol-5-sulfonic acid)	1.50
578-580 PB L 74067	Helio Bordeaux BLC. (Slight variation of preceding item, same ingredients)	1.50
581-583 PB L 74067	Helio fast red RBL. (From 3-nitro-4-toluidine and β-naphthol)	1.50
584-590 PB L 74067	Helio orange CAG. (From aniline and Schaffer's salt)	1.50
591-593 PB L 74067	Helio orange GL. (2-Nitroaniline-4-sulfonic acid and R-salt)	1.50
594-596 PB L 74067	Helio orange TD. (o-chloroaniline and Schaffer's salt.)	1.50
597-600 PB L 74067	Helio Bordeaux BL. (Calcium lake, from α-naphthylamine (chiefly) with 1-naphthol-5-sulfonic acid sodium salt)	1.50
601-603 PB L 74067	Lacquer Bordeaux B. (Chiefly chloroanisidine with R-salt)	1.50
604-609 PB L 74067	Lake red C. (4-chloro-3-toluidine-6-sulfonic acid with β-naphthol)	1.50
610-615 PB L 74067	Lake red P. (1-Amino-4-nitro-benzene-2-sulfonic acid with β-naphthol)	1.50

616-618 PB L 74067 — Lake red tones LDD (Barium lake of the combination 3-amino-6-chloro-p-toluene-sulfonic acid with β-naphthol) 1.50

619-624 PB L 74067 — Lake red tones LCL and LCLL. (Identical with preceding item, except for addition of a small amount (4% and 5%, respectively) of the combination 2-naphthylamine-1-sulfonic acid with β-naphthol) 1.50

625-627 PB L 74067 — Lithol Fast orange 3GL. (3-Nitro-4-amino-1-benzo-trifluoride with β-naphthol) 1.50

628-633 PB L 74067 — Lithol Fast orange RN. (2,-4-dimtro-aniline with β-naphthol) 1.50

634-636 PB L 74067 — Lithol Fast red tones B. (3-amino-4-methoxy-diphenylsulfone with 2,3-hydroxynaphthoyl-o-xylidine) 1.50

637-639 PB L 74067 — Lithol Fast red tones R. (4-Methoxy-3-aminophenyl-benzoyl-sulfone with hydroxy-naphthoyl-m-xylidine) 1.50

640-651 PB L 74067 — Lithol Fast scarlets RB, GRN, and RN. Different specifications based on the combination 2-nitro-4-methyl-aniline and β-naphthol) 1.50

652-654 PB L 74067 — Permanent Bordeaux FFR extra. (m-Nitrotoluidine with naphthol-AS-D) 1.50

655-657 PB L 74067 — Permanent Bordeaux FSR extra. (2-Methoxy-4-nitro-aniline and naphthol AS-BO) 1.50

658-660 PB L 74067 — Permanent Bordeaux RRT. (5-Nitro-2-toluidine and naphthol AS-D) 1.50

661-663 PB L 74067 — Permanent Brown FG extra. (p-dichloroaniline and naphthol AS-BG) 1.50

664-666 PB L 74067 — Permanent carmine FB extra. (1-Amino-2-methoxy-5-sulfo-diethyl-amide and naphthol AS-ITH) 1.50

667-669 PB L 74067 — Permanent yellow MCG. (m-Dichloroaniline and naphthol AS-G) 1.50

670-672 PB L 74067 — Permanent orange G extra. (3,3'-dichloro-benzidine and pyrazolone) 1.50

673-675 PB L 74067 — Permanent orange GTR. (Chiefly m-chloroaniline with naphthol AS) 1.50

676-679 PB L 74067 — Permanent red FGR extra. (2,4,5-trichloroaniline with Naphthol AS-D and benzoic acid) 1.50

680-682 PB L 74067 — Permanent red FR extra. (o-chloro-aniline and naphthol-AS) 1.50

683-685 PB L 74067 — Permanent red FRL extra. (2,5-dichloroaniline and hydroxy naphthoyl-p-toluidine) 1.50

686-691 PB L 74067 — Permanent red FRLL extra. (2,5-dichloroaniline and naphthol AS) 1.50

692-694 PB L 74067 — Permanent red F4R extra. (p-Nitro-o-toluidine and naphthol AS-E) 1.50

695-697 PB L 74067 — Permanent red F4RH extra. (2-Methyl-4-chloroaniline and naphthol AS-TR) 1.50

698-700 PB L 74067 — Permanent red GG extra. (2,4-dinitroaniline and β-naphthol) 1.50

701-702 PB L 74067 — Permanent red R extra. (2-Chloro-4-nitro-aniline and β-naphthol) 1.50

703-705 PB L 74067 — Permanent red RLT. (This product was discontinued) 1.50

706-708 PB L 74067 — Permanent red 4RT. (2-Methyl-4-chloro-aniline and naphthol AS-TR) 1.50

709-711 PB L 74067 — Permanent red tones NCR. (1-Amino-4-chloro-5-carboxy-benzene-2-sulfonic acid and β-naphthol) 1.50

712-713 PB L 74067 — Permanent ruby FBH extra. (2-methyl-5-chloro-aniline and 2',3'-hydroxy-naphthoyl-2-methyl-5-chloroaniline) 1.50

714-716 PB L 74067 — Permanent violet FR extra. (2-nitro-4-methoxy-aniline and naphthol AS-BO) 1.50

717-719 PB L 74067 — Pigment carmine 5 B. (Chiefly 2-hydroxy-1-naphthyl-amine-3,6-disulfonic (and some -6-sulfonic) acid with 2,2'-dimethyl-4-4'-diamino-diphenyl) 1.50

720-723 PB L 74067 — Pigment Lake red LC. (Barium lake of chiefly 1-methyl-3-amino-6-chlorobenzene-4-sulfonic acid with β-naphthol) 1.50

724-726 PB L 74067 — Pigment Lake red LP. (Barium lake of 1-amino-4-nitrobenzene-2-sulfonic acid with β-naphthol) 1.50

727-729 PB L 74067 — Pigment red B. (Chiefly p-nitroaniline with β-naphthol) 1.50

730-732 PB L 74067 — Spinning brown "for G.A." (2,4-dichloro-aniline with naphthol AS-LB) 1.50

733-735 PB L 74067 — Spinning brown "for RA." (p-Toluidine with naphthol AS-LB) 1.50

736-738 PB L 74067 — Spinning brown "for 5 RV." (o-anisidine-4-carboxanilide with naphthol AS-LB) 1.50

739-742 PB L 74067 — Spinning yellow "for GGV." (4-chloro-o-toluidine with aceto-acetyl-1-amino-4-chloro-2,5-dimethoxybenzene) 1.50

743-745 PB L 74067 — Spinning yellow "for GV." (2,4,5-trichloroaniline with acetoacetyl-1-amino-4-chloro-2,5-dimethoxy-benzene) 1.50

746-748 PB L 74067 — Spinning khaki "for GV." (m-chloro-aniline with naphthol AS-LB) 1.50

749-751 PB L 74067 — Vulcan fast Bordeaux BF. (2-amino-anisole-4-carboxylic acid anilide with naphthol AS-BS) 1.50

752-754 PB L 74067 — Vulcan fast yellow G. (3,3'-dichloro-4,4'-diaminodiphenyl with acetoacetyl-2-toluidide) 1.50

755-757 PB L 74067 — Vulcan fast yellow 5 G. (3,3'-dichloro-4,4'-dianisidine with acetoacetyl-1,2,4-xylidine) 1.50

758-760 PB L 74067 — Vulcan fast yellow GR. (3,3'-dichloro-4,4'-diaminodiphenyl with acetoacetyl-1,2,4-xylidine) 1.50

761-763 PB L 74067 — Vulcan fast yellow R. (4,4'-diamino-3,3'-dimethyldiphenyl with aceto-acetyl-1,2,4-xylidine) 1.50

764-767 PB L 74067 — Vulcan fast orange GG. (o-Dianisidine with acetoacetyl-1,2,4-xylidine) 1.50

768-771 PB L 74067 — Vulcan fast pink GF. (2-aminotoluene-4-carboxylic acid-as-m-xylidide with naphthol AS-E) 1.50

772-775 PB L 74067 — Vulcan fast red BF. (3,3'-Dichloro-4,4'-diamino-diphenyl with 1-phenyl-5-pyrazolone-3-carboxyl ethyl-ether) 1.50

Miscellaneous Chemicals (contd)

776-778 PB L 74067 — Vulcan fast red BK. (3,3'-Dichloro-4,4'-diamino-diphenyl with 1-phenyl-5-pyrazolone-3-carboxyl ethyl-ester) 1.50

779-781 PB L 74067 — Vulcan fast red GF. (o-Dianisidine with 1-(4'-methylphenyl)-3-methyl-5-pyrazolone) 1.50

782-784 PB L 74067 — Vulcan fast red GK. (Same constituents) 1.50

785-787 PB L 74067 — Vulcan fast ruby BF. (2-Amino-anisole-4-carboxanilide with naphthol AS) 1.50

788-790 PB L 74067 — Zapon fast yellow CGG. (Dicyel ohexylamine salt of "fast light yellow 3 G) 1.50

791-794 PB L 74067 — Anthralan yellow G. (1-Amino-benzene-4-sulfonic acid with 1-(6'-chloro-2-methyl-4'-sulfophenyl)-3-methyl-5-pyrazolone) 1.50

795-798 PB L 74067 — Autazol chrome navy blue BRA. (Chief constituent from M acid with 1,7-Cleve's acid, with J acid) 1.50

799-802 PB L 74067 — Autazol chrome black BA. (M acid with Cleve's acid, with gamma acid) 1.50

803-805 PB L 74067 — Autazol chrome black R. (5-Nitro-2-amino phenol with J acid) 1.50

806-808 PB L 74067 — Autazol chrome salt RK. (Developing salt for preceding product; also its substitute. (Mixture of inorganic salts, including nickel nitrate, potassium bichromate, and potassium persulfate) 1.50

809-812 PB L 74067 — Autazol black R. (Discontinued) 1.50

813-814 PB L 74067 — Autazol chrome salt R. (Developing salt for preceding item, similar to 806 above) 1.50

815-817 PB L 74067 — Dianil yellow 3 G. (From "Primuline base" and acetoacetic ester) 1.50

818-820 PB L 74067 — Dianil yellow 5 G. (Dehydrothio-toluidine-sulfonic acid with acetoacetanilide) 1.50

821-823 PB L 74067 — Dianil yellow R. (From primuline and pyrazolone) 1.50

824-826 PB L 74067 — Dianil yellow RR. (Chiefly from primuline and 1-(4'-phenylsulfonic acid)-3-methyl-5-pyrazolone) 1.50

827-830 PB L 74067 — Dianil orange G. (From primuline and 1-(4'-sulfophenyl-)5-pyrazolone-3-carboxylic acid) 1.50

831-833 PB L 74067 — Fast brown V base. (Discontinued) 1.50

834-836 PB L 74067 — Fast light yellow GGT. (Aniline-2-sulfonic acid and 1-(4'-sulfophenyl)-5-pyrazolone-3-carboxylic acid) 1.50

837-839 PB L 74067 — Fast light yellow 3 G. (Aniline-2-sulfonic acid and 1-(2'-sulfophenyl)-5-pyrazolone-3-carboxylic acid) 1.50

840-842 PB L 74067 — Fast light yellow R. (2-naphthylamine-1-sulfonic acid with 1-(6'Chloro-2'-methyl-4'-sulfophenyl)-3-methyl-5-pyrazolone) 1.50

843-845 PB L 74067 — Flavazin E 3 GL. (o-Chloroaniline and 1-(6'-chloro-2'-methyl-4'-sulfophenyl)-3 methyl-5-pyrazolone) 1.50

846-848 PB L 74067 — Rapid filter yellow. (Tri-potassium salt of the preceding product) 1.50

849-851 PB L 74067 — Flavazin 4 G. (Aniline and 1-(6'-chloro-2'-methyl-4'-phenyl sulfonic acid)-5-pyrazolone-3-carboxylic acid) 1.50

* PB L 80395. KRUTA, ERICH. Manufacture of vinyl chloride by means of liquid catalysts. (FIAT Final Rept 1199). Jun 1947. 28p. Price: Mimeo-$0.75

This report describes a process for the manufacture of vinyl chloride from acetylene and hydrogen chloride, using a solution of cuprous chloride in hydrochloric acid as the catalyst. The process may be operated with recycling of the unreacted gases, or it may be run as a single pass reaction without recycling. A discussion of the construction and operation of the apparatus is given, with the effect of the variables on the yield of vinyl chloride. The data have been drawn from laboratory experiments. A temporary, makeshift plant has been erected at the Badische Anilin und Soda Fabrik (formerly I. G. Farbenindustrie A.G., Ludwigshafen) which is described. The optimum design of a large scale plant is given with a discussion of the factors in the reaction conditions which influence the design and operation. The process has the advantage over the solid catalyst process of giving a purer vinyl chloride in about the same yield; the operation is, perhaps, simpler. The process described in this report has been tried out only in the laboratory and in a trial plant at Ludwigshafen. The data available come only from the laboratory; data from the Ludwigshafen plant, while interesting, would not be conclusive, as the design of the plant is admittedly make shift and not the best possible. Diagrams of the apparatus in use, graphs, and flowdiagrams of the proposed plant are included.

PB L 47285. REPPE. List of reports of the Reppe laboratory 1945. (FIAT Microfilm Reel O-1, PB 47285). Nov 1945. 18 f. Price: Microfilm-$1.00 - Enlargement Print-$2.00

The titles of 232 papers in various fields of chemical technology together with the names of their authors and the dates are listed. Attached is another list of reports (152 items listed by title) in the private file of Dr. Reppe, which were held at I. G. Casella Works, Mainkur-Frankfurt.

ELECTRICAL MACHINERY, EQUIPMENT, AND SUPPLIES

Communication Equipment

PB L 80852. MORRIS, ROBERT W. Considerations affecting the design of flashing signal filament lamps. n. d. 16 p. Price: Microfilm-$1.00 - Photostat-$2.00

In this paper the subject is discussed under the following headings: introduction; incandescence and nigrescence; filament current; special cases; design life; resistance in series; ruggedness; early multiple filament lamps; later multiple filament lamps; and conclusions.

PB L 73638. SIEMENS-HALSKE A.G., BERLIN-SIEMENSSTADT, GERMANY. Electric measuring devices, low-frequency amplifiers and carrier frequency equipment for telephone lines. (FIAT Microfilm Reel G0 12, Frames 1-471). 1940-1943. 471 f. Price: Microfilm-$5.50-Enlargement Print-$47.50

This FIAT microfilm reel consists of descriptions and commercial prospectuses of measuring devices for long-distance communications, low-frequency amplifiers for telephone, and wired radio lines, and equipment for carrier-frequency telephone installations. Three sections of the reel listed below will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $5.50. Please include PB

and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Titles	Price
1-227 370-383 PB L 73638	Measuring devices for electric long-distance communications. Descriptions, price lists and application of electric measuring devices developed and marketed by the Siemens-Halske A. G., Berlin-Siemensstadt. Catalogs supplemented by typewritten sheets. 1940. In German.	$24.50
228-369 PB L 73638	Low-frequency amplifier equipment for telephone and wired radio lines. Catalog. 1943. In German.	14.50
384-471 PB L 73638	Carrier frequency equipment for telephone lines. Catalog. 1942. In German.	9.00

PB L 73638-S. SIEMENS-HALSKE A.G., BERLIN-SIEMENSSTADT, GERMANY. Electric measuring devices, low-frequency amplifiers and carrier frequency equipment for telephone lines. (FIAT Microfilm Reel G6 12, Frames 1-471, abstract cards). 1940-1943. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
Abstracts in English on the above item prepared by FIAT investigators.

PB L 85121. U. S. ARMY. FORCES IN THE EUROPEAN THEATER. CHIEF SIGNAL OFFICER. Dictionary of German electrical symbols. (DIN 40700). n. d. 120 p. Price: Printed copy-$3.00
This dictionary comprises approximately 1200 symbols used to designate components of German communication systems. Each symbol is identified according to conventional American designation. In addition, samples of various types of communications set-ups and line route networks are included. The German document DIN 40700 dated January 1941 constitutes the basis for this report.

Generators, Motors, Transmission, Distribution and Allied Equipment

PB L 73672. SIEMENS-SCHUCKERTWERKE A.G., BERLIN-SIEMENSSTADT, GERMANY. Articles on medium and high-voltage control equipment. (FIAT Microfilm Reel J 248, Frames 7329-7413). 1938-1947. 85 f. Price: Microfilm-$1.75 - Enlargement Print-$8.50
This FIAT microfilm reel consists of a series of articles on medium and high-voltage control equipment as described below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $1.75. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
7329-7331 PB L 73672	Index of FIAT Microfilm Reel J 248, PB 73672. In German.	$1.50
7332-7341 PB L 73672	Designs of polyphase switchgear for less than 1000 V. 1947. In German. Description and drawings.	1.50
7342-7372 PB L 73672	High-voltage switchgear with expansion switches and pneumatic dives. 1938. In German. Reprint of an article by I. Sihler of Siemens-Schuckert from the "Technische Mitteilungen", vol. 17. Photographs and drawings.	3.50
7373-7396 PB L 73672	Switchboard panels and instrument columns. 1933-1944. In German. Collection of articles and memoranda on modern switchboard gallery equipment.	2.50
7397-7413 PB L 73672	Outdoor stations up to 22KV operating voltage. April-June 1943. In German. Reprints of an article by I. Sihler in the "Elektrotechnische Zeitschrift," 1938, vol. 9 and an article by K. Bader from the "Siemens Zeitschrift." Photographs and drawings.	2.00

PB L 73672-S. SIEMENS-SCHUCKERTWERKE A.G., BERLIN-SIEMENSSTADT, GERMANY. Articles on medium and high-voltage control equipment. (FIAT Microfilm Reel J 248, Frames 7329-7413, abstract cards) 1938-1947. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
Abstracts in English on the above item prepared by FIAT investigators.

PB L 73972. SIEMENS & SCHUCKERT A.G., BERLIN, GERMANY. Course of lectures on electrical engineering, especially in the field of power generation. (FIAT Microfilm Reel B-233, Frames 165-547). 1942-1943. 383 f. Price: Microfilm-$4.75 - Enlargement Print-$38.50
This FIAT microfilm reel consists of a course of lectures presented in 1942 and 1943 to the engineers of the Dynamotor Works of the Siemens & Schuckert A. G., Berlin. In these lectures both theoretical and practical problems in electrical engineering, more especially in the field of power generation were discussed. Drawings, photographs and diagrams included. In German.

PB L 73701. SIEMENS-SCHUCKERTWERKE A. G., BERLIN-SIEMENSSTADT. D-c motors for hoists and wind tunnel propellers. (FIAT Microfilm Reel J 214, Frames 1-436) 1936-1944. 436 f. Price: Microfilm-$5.25 - Enlargement print-$44.00
This FIAT microfilm reel consists of reports, data, and drawings for d-c motors for hoists and wind-tunnel propellers. Individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $5.25. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
1-81C PB L 73701	D-c motors for hoists. Articles, notes, calculations and drawings, by Siemens & Schuckert experts. 1942-1944. In German.	$8.50
82-436 PB L 73701	D-c motor for propellers used in wind tunnels of the German society for aircraft research. Reports, data and drawings with parts lists. 1936-1944. In German	35.50

PB L 73701-S. SIEMENS-SCHUCKERTWERKE A. G., BERLIN-SIEMENSSTADT. D-c motors for hoists and wind tunnel propellers. (FIAT Microfilm Reel J 214, Frames 1-436, abstract cards) 1936-1944. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
These abstracts give a brief summary, in English, of the reports in PB L 73701.

PB L 73671. SIEMENS-SCHUCKERTWERKE A. G., BERLIN-SIEMENSSTADT, GERMANY. Electric contacts and theory of squirrel cage motors. (FIAT Microfilm Reel J 247, Frames 382-513) 1939-1947. 132 f. Price: Microfilm-$2.25 - Enlargement print-$13.50.
This FIAT microfilm reel consists of a number of drawings for electric contacts and articles pertaining to the theory of squirrel cage motors as itemized below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $2.25. Please include PB

Generators (contd)

and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
382-386A PB L 73671	Switch contactors S60W and AGS 80 for maximum 60 and 80 amp. respectively. Drawings. 1946. In German.	$1.50
387-388 PB L 73671	Door contacts. Technical drawings. 1946. In German.	1.50
389-390A PB L 73671	Press button switch Type G Mg. Drawings. 1947. In German.	1.50
391-425 PB L 73671	Choice of the proper number of slots for squirrel cage motors. Part I: Theoretical basis. Report. 1939. In German.	3.50
426-475 PB L 73671	Choice of the proper number of slots and predetermination of noise in squirrel cage motors. Part II: Directions for calculation and demonstration on an actual example. 1943. In German.	5.00
476-613 PB 73671	Choice of the proper number of slots for squirrel cage motors. Part III: Examination of the noises made by the main electric motors of submarines. 1944. In German.	4.00

PB L 73671-S. SIEMENS-SCHUCKERTWERKE A. G., BERLIN-SIEMENSSTADT, GERMANY. Electric contacts and theory of squirrel cage motors. (FIAT Microfilm Reel J 247, Frames 382-613, abstract cards) 1939-1947. 9 p.
Price: Microfilm-$1.00 - Photostat-$1.00.
Abstract in English on the above item prepared by FIAT investigators.

PB L 73668. SIEMENS-SCHUCKERTWERKE, BERLIN-SIEMENSSTADT, GERMANY. Ground return in high-voltage power lines. (FIAT Microfilm Reel J 235, Frames 6963-7043) 1942-1943. 81 f. Price: Microfilm-$1.75 - Enlargement prints - $8.50.
This FIAT microfilm reel consists of three reports dealing with the ground return problem of three-phase high-voltage power transmission lines. The items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $1.75. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
6963-6999 PB L 73668	Siemens' development work on a 400 kv three-phase power transmission line. Photographs, drawings, circuit diagrams, graphs and tables included. 1943. In German.	$4.00
7000-7037 PB L 73668	Proposals toward the solution of the ground return problem in 400 kv three-phase power transmission. Paper presented by Dr. W. von Mangoldt of the Siemens-Schuckertwerke, March 23, 1943. In German.	4.00
7038-7043 PB L 73668	Ground return control. Report by Prof. Dr. Ing. A. Schwaiger, Munich. Published in the "Elektrizitätswirtschaft", Oct. 8, 1942 and Mar. 8, 1943. In German.	1.50

PB L 73668-S. SIEMENS-SCHUCKERTWERKE, BERLIN-SIEMENSSTADT, GERMANY. Ground return in high-voltage power lines. (FIAT Microfilm Reel J 235, Frames 6963-7043, abstract cards) 1942-1943. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00.
Abstracts in English on the above item prepared by FIAT investigators.

PB L 73640. SIEMENS-SCHUCKERTWERKE, BERLIN-SIEMENSSTADT, GERMANY. Technical data, drawings, parts lists and articles on synchronous and asynchronous polyphase motors. (FIAT Microfilm Reel J 216, Frames 1287-1615A) 1936-1944. 334 f. Price: Microfilm-$4.25 - Enlargement print-$33.50.
This FIAT microfilm reel consists of articles on synchronous and asynchronous three-phase and polyphase motors as well as technical data, drawings, parts lists, photographs, as itemized below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $4.25. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
1287-1313C PB L 73640	Polyphase series-wound 300 kw commutator motor. Data, drawings and parts lists. 1938. In German.	$ 3.00
1314-1348 PB L 73640	Stator-excited a-c 310 KVA commutator motor. Data, drawings and parts lists. 1941. In German.	3.50
1348-1367C PB L 73640	Frequency converter, 8 KVA. Description, data, drawings and photographs. 1939-1941. In German.	2.50
1368-1381 PB L 73640	Polyphase exciter 10.5 KVA. Data, drawings, photographs and operation instructions. 1940-1941. In German.	1.50
1382-1424 PB L 73640	Three-phase synchromotor, 4000 KW. Data, drawings, parts lists, photographs, wiring diagrams and text. 1939-1942. In German.	4.50
1425-1476 PB L 73640	Three-phase synchro motor, 5500 kw. Data, drawings, diagrams and an article by Hellmuth Raymond on the effect of starting currents of synchro and asynchro motors on the line voltage reprinted from the "Wissenschaftliche Veröffentlichungen" of the Siemens Works. Sep. 30, 1941. In German.	5.50
1477-1522 PB L 73640	Three-phase asynchro motor, 5600 kw. Data, drawings, photographs and operating instructions. 1943-1944. In German.	5.00
1523-1539A PB L 73640	Three-phase asynchro motor, 3500 kw for the operation of a control generator. Introduction, data and drawings. 1938. In German. Some frames may not reproduce well.	2.00
1540-1583C PB L 73640	Three-phase asynchro motor, 8000 kw. Data, photographs, drawings and a reprint of an article by C. Gebauer on a line-coupling converter as supply for the German electric railways published in the "Elektrische Bahnen", Apr. 1941. In German. Some frames may not reproduce well.	5.00
1584-1615A PB L 73640	Reversing three-phase asynchro motor. Data, drawings with parts lists and a technical report on reversing three-phase armature windings for the rpm. ratio 2 : 3. By Trassl. 1934 and 1936. In German.	3.50

PB L 73640-S. SIEMENS-SCHUCKERTWERKE, BERLIN-SIEMENSSTADT, GERMANY. Technical data, drawings, parts lists and articles on synchronous and asynchronous polyphase motors. (FIAT Microfilm Reel J 216, Frames 1287-1615A, abstract cards) 1936-1944. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00
Abstracts in English on the above item prepared by FIAT investigators.

INSTRUMENTS (PROFESSIONAL, SCIENTIFIC AND CONTROLLING)

*PB L 79231. ESSEN, L. German quartz clocks. (BIOS Final Rept 1316, Item 9). n. d. 11 p.
Price: Microfilm-$1.00 - Photostat-$1.00
The increasing application of quartz clocks to time-keeping adds special weight to certain of their properties. Relative experimental data can be obtained only from observations extended over a number of years and full use must therefore be made of all the experience gained in the past. The Deutsche Hydrographische Institut was known to have used quartz clocks as time keepers since about 1933 and that they had found clocks made commercially by Rohde & Schwarz to be the most satisfactory. Rohde & Schwarz, in Munich were visited and data obtained are recorded in this report.

*PB 79431. HARRISON, C. F. R. and MEILOCK, R. S. Control instruments in the German chemical industry. (BIOS Final Rept 1321, Item 31). May-Jun 1945. 163 p.
Price: Microfilm-$4.00 - Photostat-$11.00
The report describes an investigation of the industrial control methods and instrumentation as employed in the German chemical industry. The targets visited were mainly in the U. S. zone of occupation, together with a few in the French and British zones. So far as was practicable instruments observed in service at chemical plants were followed up at the instrument manufacturers where design and construction could be obtained. The investigation was somewhat limited because the field of investigation was so large and that only some five or six weeks were devoted to the study. The three important firms of instrument makers - Siemens & Halske (Berlin), Askania (Berlin) and Gesellschaft für Selbsttätige Reglung (Berlin) - were not visited. The investigators feel however that they have not missed any important developments which were applicable to the chemical industry. Photographs, drawings, circuit diagrams and simple sketches illustrate the report.

PB M 27443. HORSLEY, CARERTON B. Documents and equipment obtained during investigation of German X-ray and associated industries. (Supplement to Final report on the investigation of the X-ray industry in Germany. PB 27442) Jul 1945. 16 p. Price: Microfilm-$1.00 - Photostat-$2.00

*PB L 79435. MCCARTHY, F. and others. Report on Nestler's automatic logarithmic dividing machine and other targets. (BIOS Final Rept 1254, Item 9, 31). Aug 1946. 53 p. Price: Microfilm-$2.00 - Photostat-$4.00
This report contains data and information received through visits to: the factory of O. Ott, Kempten Allgau, makers of planimeters, current meters, differential calculators, and precision computing apparatus; the factory of Georg Kesel, Kempten Allgau, manufacturers of dividing machines; the factory of A. Nestler, Lahr Baden, manufacturers of sliding rules, drafting scales and drawing instruments, with a detailed report on the Nestler Automatic Logarithmic dividing machine. The text is supplemented by illustrations, photographs, diagrams, and drawings.

*PB L 85204. MADDOCK, I. Methods of shock wave measurement in German armament research establishments. (BIOS Final Rept 293, Item 9). Nov 1945. 39 p.
Price: Microfilm-$1.75 - Photostat-$4.00
This report contains detailed data and information received through visit and investigation of the following targets: The Helmholtz Institute, Mount Wendelstein; the Rheinmetal Borsig Research Station, near Hanover, with description given on methods used for measurement of shock waves from small explosive charges, the automatic peak recorder and the measurement of short times. Sketches and diagrams are included. Material listed as evacuated by the British covers fourteen pages.

PB L 80895. REICHERTER, GEORG, SPEZIALFABRIK FÜR MESSGERÄTE UND PRÜFMASCHINEN, ESSLINGEN AM NECKAR. Directions for use of the Brivskop 187.5 hardness tester and report. Mar 1944. 30 p. Price: Microfilm-$1.00 - Photostat-$2.00
This document contains instructions for Brinell and Vickers hardness testing machines. 28 tables are included. In German.

PB L 80867. SCHAFER, TILLMAN H. Reverberation simulator and random noise producer. Dec 1941. 4 p.
Price: Microfilm-$1.00 - Photostat-$1.00
An electronic device has been developed for the purpose of simulating some of the sounds frequently heard by the operators of the sound gear on the destroyers. The sounds selected were the reverberation set up by the out-going signal and the hiss produced by the movement of the ship through the water. In this paper the circuit is described and illustrated. This report is from the University of California, Division of National Defense Research at the U. S. Navy Radio and Sound Laboratory, San Diego, California.

PB L 80857. SHOEMAKER, DAVID P. and others. A capillary-type viscometer for use with solutions containing volatile solvents, with application to measurements of viscosities of nitrocelluloses. Feb 1947. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
This article is a reprint from Analytical Chemistry, volume 19, page 131, February 1947. A capillary-type viscometer for the study of solutions containing volatile solvents has been designed and tested. By means of this modified capillary-type viscometer it is possible to measure the viscosity of a solution in the container in which it is prepared. This viscometer is described in this article and the procedure explained. A diagram of the viscometer is included. The report is based on work done for the OSRD under contract OEMsr-881 with the California Institute of Technology.

PB L 80856. SOCIETE BELGE D'OPTIQUE ET D'INSTRUMENTS DE PRECISION. Colorimetry and spectrum analysis. n. d. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
This document presents brief abstracts of 10 papers on colorimetry and spectrum analysis submitted to the Belgian Society for Optics and Precision Instruments during the war. In French.

*PB L 81635. TAIT, WILLIAM H. and others. German fine balance industry. (BIOS Final Rept 1416, Item 9). Jul 1946. 33 p. Price: Microfilm-$1.75 - Photostat-$4.00
This document contains seven reports covering investigation of seven manufacturers of fine balances in Germany. The reports cover factory conditions, prewar and present employees, products, designs, manufacturing methods, and output. A number of illustrations are included.

MACHINERY (EXCEPT ELECTRICAL)

PB L 74683. AACHEN, GERMANY. TECHNISCHE HOCHSCHULE. Machine tools and hand tools. (FIAT Microfilm Reel L 107, Frames 1184-1924) 1939-1945. 740 f. Price: Microfilm-$6.00 - Enlargement print-$74.00
This reel was prepared by FIAT investigators in Germany. 18 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items.

Frames	Title	Price
	Research reports of the "Laboratorium für Werkzeugmaschinen und Betriebslehre" under the direction of H. Opitz.	
1184-1211 PB L 74683	Investigating various materials for bars with regard to cutting during the turning operation. 1939. In German.	3.00
1212-1267 PB L 74683	Machinability investigations of "ECMo 100" from the "Siemens-Martin" furnace and electric furnace as well as of case hardening steel and carbon steel. 1940. In German.	6.00
1268-1280 PB L 74683	Friction moment measurements on a "Stromag" multiple disc clutch. 1940. In German.	1.50
1281-1328 PB L 74683	Conference reports of the VDI working committee on "surface tests" with investigations of various subcommittees concerned with measuring methods, devices, basic requirements, and practical application. 1941-1943. In German.	5.00
1329-1332 PB L 74683	Device for measuring roughness, manufactured by the "Physikalisch Technische Reichsanstalt, Berlin". 1942. In German.	1.50
1333-1342 PB L 74683	Comparison of surface investigations on the "Frentini" device and on the electric optical instrument of the "Physikalisch Technische Reichsanstalt, Berlin." 1942. In German.	1.50
1343-1350 PB L 74683	Device for determining the surface condition of objects. Patent application A88874-K1 42, dated Jan. 28, 1939. By Aktiebolaget C. E. Johansson, Eskilstuna/Sweden, Inventors: Ragner Woen, Lindingö/Sweden. n.d. In German.	1.50
1351-1415 PB L 74683	Data concerning super finishing. 1942. In German.	7.00
1416-1481 PB L 74683	Super finish influence of working conditions. n.d. In German.	6.50
1482-1550 PB L 74683	Super finish tests for plane surfaces. By Ernst Fisken, 1943. In German.	7.00
1551-1613 PB L 74683	The efficiency increase of perferotly forged high-speed steel rotary chisels compared with ordinary forged chisels. By Herbert Graffunder, 1941. In German.	6.50
1614-1731 PB L 74683	Influence of thorough forging on the carbide distribution and endurance of high speed steel tools. By Ludwig Lowis, 1942. In German.	12.00
1732-1810 PB L 74683	Comparison of 12 lapping discs without diamonds of different hardness and granulation with a diamond lapping disc. By Hans Starek, 1942. In German.	8.00
1811-1812 PB L 74683	Broaching tests. 1942. In German.	1.50
1813-1817 PB L 74683	Broaching - VA 186. Visit to "Oswald Forst, Solingen." 1941. In German.	1.50
1818-1889 PB L 74683	Broaching tests - VA 186. 1942. In German.	7.50
1890-1908 PB L 74683	Endurance tests with various hard alloys. 1942. In German.	2.00
1909-1924 PB L 74683	Comparison tests with welded cutters from "Böhler & Co." By Grotkamp. 1945. In German.	2.00

PB L 74649. GOETZEWERK A. G., BURSCHEID BEI KÖLN, GERMANY. Reports on machinery, particularly packings and piston rings. (FIAT Microfilm Reel L-129, Frames 2340A - 3115) 1936-1941. 777 f. Price: Microfilm-$6.00 - Enlargement print-$78.00.
This reel was prepared by FIAT investigators in Germany. 43 individual items are listed below and will be available as enlargement prints; the entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
2340A-2346 PB L 74649	Comb-shaped profiled metal packing. Design patent application dated Oct 26, 1943. In German.	$1.50
2347-2354 PB L 74649	Manufacture of packings with metal coatings. Patent application No. I 62199, class 48a (2) dated August 11, 1938; Patent No. 696746. In German.	1.50
2355-2364 PB L 74649	Determination of shape modification and tensile strength of piston rings made of sintered iron. Patent report dated May 20, 1944. In German.	1.50
2364A-2376 PB L 74649	Chemical emmission and spectral analysis. By Bruch. 1944. In German.	1.50
2377-2379 PB L 74649	Vulcanization tests for the manufacture of "Goetzolin". 1944. In German.	1.50
2380-2393 PB L 74649	Tests with "Goetzolin". Partial report by Bremer. 1944. In German.	1.50
2394-2465 PB L 74649	Development of profiled soft iron packings. 1936. In German.	7.50
2466-2481 PB L 74649	Tests with grooved packings. 1942. In German.	2.00
2482-2493 PB L 74649	Testing "BS"-packings (Buna S) of various types compared with "Goetze-A-Sta" packings. 1940. In German.	1.50
2494-2505 PB L 74649	Tests concerned with the heat resistance of "S S"-packings (Buna packing with wire gauze). By Diehl. 1941. In German.	1.50
2506-2512 PB L 74649	Test report on bearing packings for railroad car axles. 1937. In German.	1.50
2513-2516 PB L 74649	Structure and grain size limit investigation of 5 grades of soft iron. 1936. In German.	1.50
2517-2522 PB L 74649	Magnetic and metallographic investigation, as well as a qualitative analysis of a new "Goetze V2A" packing. 1936. In German.	1.50
2523-2565 PB L 74649	"A - Sta" packings. 1938. In German.	4.50
2566-2589 PB L 74649	Preliminary investigation of profiled packings from I.G. Wolfen. 1937. In German.	2.50
2590-2640 PB L 74649	Tests of rubber packings with wire gauze. By A. Thum and A. Baurhenn. 1944. In German.	5.50
2641-2720 PB L 74649	Test report on the following packing rings: 110 x 100, 120 x 100, 130 x 100, 140 x 100 mm Ø made of 38% material of approx. 0.6 and 1.2 mm thickness. Made available by "Technische Hochschule, Stuttgart". 1945. In German.	8.00

Machinery (contd)

2721-2740 FB L 74649 — Progress in the use of Buna in the construction of motors. By K. Diehl. 1940. In German. 2.00

2741-2746 FB L 74649 — Reinforced Buna packings for the construction of aircraft motors. By K. Diehl, reprint from JFK. 1943. In German. 1.50

2747-2763 FB L 74649 — Partial report of rubber tests by the laboratory in Opladen from Mar 17, 1944 up to May 31, 1944. In German. 2.00

2764-2775 FB L 74649 — Introduction to the Buna conference at Frankfurt, Mar 1944 with a film on piston rings. By K. Diehl. In German. 1.50

2776-2779 FB L 74649 — Tests for the development of an automatic high pressure packing By Dietenbach. 1945. In German. 1.50

2780-2809 FB L 74649 — The "Goetze" clutch. By Karl Th. Katz. 1937. In German. 3.00

2810-2813 FB L 74649 — Present state of the "Goetze Zafit" lubricating agent. 1930. In German. 1.50

2814-2820 FB L 74649 — Piston ring tests in the engine. 1940. In German. 1.50

2821-2838 FB L 74649 — Piston rings for light metal bushings. 1939. In German. 2.00

2839-2842 FB L 74649 — Test with "Atramented" piston rings (Fast Zl method) in an "Opel" motor. By Brenner. 1939. In German. 1.50

2850-2860 FB L 74649 — Tests of thermally stressed piston rings. 1943. In German. 1.50

2861-2869 FB L 74649 — Investigating the motion of the piston ring in the piston groove. n.d. In German. 1.50

2870-2873 FB L 74649 — Investigation of the vibration resistance of piston rings. 1936. In German. 1.50

2874-2878 FB L 74649 — Sliding surfaces with phosphate layers and an addition of graphite. n.d. In German. 1.50

2879-2911 FB L 74649 — Determination of the vibration resistance. (Alternating bending strength of piston rings. First partial report). 1936. In German. 3.50

2912-2958 FB L 74649 — The importance of the mold arrangement on the stress capacity of the piston ring. By Rudolf Gottschalk. 1935. In German. 5.00

2959-2971 FB L 74649 — Investigating the influence of the radial pressure distribution, the amount of stress and impact on the thickness of piston rings considering the required radial wall strength and height. 1937. In German. 1.50

2972-2998 FB L 74649 — Influence of the fatigue strength stability of the material on the shape of piston rings under thermal stress. 1943. In German. 3.00

2999-3025 FB L 74649 — Calculatory determination of the shape of piston rings with various radial pressure. 1943. In German. 3.00

3026-3063 FB L 74649 — Tests for determining the gas permeability of piston rings at various impacts. 1940. In German. 4.00

3064-3075 FB L 74649 — Test stand experiments made with piston rings of cast iron and with light metal inserts. 1942. In German. 1.50

3076-3081 FB L 74649 — Running test with running surface treated piston rings in the "Maybach" motor. 1939. In German. 1.50

3082-3115 FB L 74649 — Investigating piston rings of aircraft motors. 1938. In German. 3.50

PB L 73558. HARTUNG, FRITZ. The under-water turbine. (FIAT Microfilm Reel CC 220, Frames 1-137). Jun 1955. 137 f. Price: Microfilm-$2.25 - Enlargement Print-$14.00
This paper is a critical examination of underwater turbines, their reliability and economy in comparison with the usual low-head turbines. Deviating from the normal structure of turbines, the complete turbine and generator installation of of the underwater turbine plant is built into a weir with an adjustable gate. The idea of underwater turbines is of American origin, but was not developed further because of technical difficulties. The author proves that the disadvantages of the underwater turbines exceed the advantages. The advantages are: harmonic fitting into the landscape, saving of iron for weirs, locks and machinery, and better utilization of energy in case of high water. The major disadvantages are: considerable difficulties in operation, permanent unfavorable effects with respect to river regulation, difficult operation with drifting ice, lower annual capacity on account of less turbine efficiency, and partially higher operating expenses. Hence the building of underwater turbines is advisable only in particular cases. A number of possibilities for developing and improving is shown which may lead to better economy of underwater turbines. The paper contains calculations regarding hydraulics and economy of water power, graphs and numerous pictures. In a supplement, operating experiences and annual power yield of existing underwater turbines are reported on. The data confirm the arguments of the author. 1 table, 49 pictures, 15 graphs, and 9 drafts are included. In German.

PB L 82061. HEIDENREICH & HARBECK, HAMBURG, GERMANY. Drawings for bevel gear shapers. (FIAT Microfilm Reel X-93, Frames 1-657). 1935-1945. 657 f. Price: Microfilm-$7.00 - Enlargement Print-$69.00
This reel consists of detail and assembly drawings for two shapers as listed below. Both parts of the reel will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $7.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
1-344 PB L 82061	15 KH bevel gear shaper for straight teeth. (0.5 to 5 metric module). 1934-1942. In German.	$36.00
345-657 PB L 82061	75 KH bevel gear shaper for straight teeth. (3 to 20 metric module). 1938-1944. In German. See frames 658-724, reel X-94, PB 82012 for additional drawings.	33.00

PB L 82012. HEIDENREICH & HARBECK, HAMBURG, GERMANY. Drawings for metal and woodworking machines. (FIAT Microfilm Reel X-94, Frames 658-1253). 1934-1944. 596 f. Price: Microfilm-$7.00 - Enlargement Print-$63.00
This reel consists of detail and assembly drawings for metal working machines manufactured by Heidenreich & Harbeck, Hamburg, and for woodworking machines manufactured by W. Ritter, Hamburg, as listed below. The individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $7.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Machinery (contd)

Frames	Title	Price
658-724 PB L 82012	75 KH bevel gear shaper for straight teeth. 1935. In German. Continuation of frames 345-657, reel K-94, PB 82061.	$ 8.00
725-1118 PB L 82012	20 E Universal turret lathe with 215 mm distance between centers. 1937-1945. In German.	41.00
1119-1160 PB L 82012	BR IV horizontal frame saw for trunk diameters to 1250 mm. 1935. In German. Some frames will not reproduce well.	6.00
1161-1253 PB L 82012	CHE and CHK veneer lathe. 1935-1936. In German. Some frames will not reproduce well.	11.00

MEDICAL RESEARCH AND PRACTICE, INCLUDING CLINICAL APPLICATION OF DRUGS AND PHARMACEUTICALS

PB M 74040. BERLIN. LIBRARY OF STATE. A collection of books. (FIAT Microfilm Reel B 284, Frames 783-1254) 1939-1941. 472 f. Price: Microfilm-$5.50 - Enlargement Print-$47.50
This FIAT microfilm reel consists of books in the field of medicine and certain branches of biology. The material was obviously seized in the above library. Individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $5.50. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
783-890 PB M 74040	Practice of zoological physiology. By Schlieper. 1940. In German.	$11.00
891-1109 PB M 74040	The diseases of the heart, clinical symptoms, X-ray pictures and electrocardiography. By Uhlenbruck. 1939. In German.	22.00
1110-1225 PB M 74040	Doctor and patient. By von Weizsäcker. 1941. In German.	12.00
1226-1254 PB M 74040	Volume of brain and horsonal processes in the evolution of man. By Versluys. 1939. In German.	3.00

PB M 74007. BERLIN. PATHOLOGICAL INSTITUTE OF THE UNIVERSITY. A collection of various medical research papers. (FIAT Microfilm Reel B 277, Frames 1-271). 1944-1946. 271 f. Price: Microfilm-$3.50 - Enlargement Print-$27.50
This FIAT microfilm reel consists of 11 research reports in the field of pathological anatomy. The material was obviously seized in the above institute. Individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $3.50. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
1-78 PB M 74007	History of research on allergy. By Rössler. 1944. In German.	$8.00
79-85 PB M 74007	The ulcer (gastric and duodenal)in the dissection material of Prague. By Hamperl. 1945. In German.	1.50
86-107 PB M 74007	Investigations concerning the insular system and insular adenomata of the pancreas, particularly with regard to the cells characteristic of diabetes mellitus and spontaneous hypoglycemia. By Terbrüggen. 1944. In German.	2.50
108-165 PB M 74007	Two basic forms of amyloidosis, with special regard to amyloid kidney and amyloid nephrosis. By Terbrüggen. 1944. In German.	6.00
166 PB M 74007	The cerebral changes in Gaucher's disease of infants. By Schairer and Hübner. 1944. In German. Incomplete.	1.50
167-190 PB M 74007	On malarial myocarditis. By Benecke. 1944. In German.	2.50
191-199 PB M 74007	Determination of the density of human brain substance by measuring its specific gravity; a contribution to the diagnosis of brain swelling. By Burkhardt. 1944. In German.	1.50
200-207 PB M 74007	Contribution to the problem of blood transfusion reactions; clinical and anatomical investigations of two cases of death following transfusion of stored blood. By Krücke and Seemelroth. 1944. In German.	1.50
208-212 PB M 74007	Studies on the effect of cold upon explanted tissues. By Boemke and Gärtner. 1944. In German.	1.50
213-235 PB M 74007	On the knowledge of parallergy; experimental studies regarding parallergic, morphologic and functional reactions on skin and mucous membranes as well as on isolated organs of several animals experimented on. By Kickhoff. 1944. In German.	2.50
236-271 PB M 74007	Pathologic anatomical and experimental investigations into the changes of lymph nodes as a result of diphtheria toxin. By Kettler. 1946. In German.	3.50

PB M 74684. DÜSSELDORF, GERMANY. ACADEMY OF MEDICINE. A collection of doctors' theses. (FIAT Microfilm Reel L 78, Frames 9815-9999 and 1-719) 1938-1944. 904 f. Price: Microfilm-$6.00 - Enlargement print-$90.50.
This FIAT microfilm reel consists of 24 items in the field of medicine. Individual theses are listed below and will be available as enlargement prints only. Please include PB and frame numbers when ordering particular items from this reel. In German.

Frame	Title	Price
9815-9839 PB M 74684	A case of cerebral thrombo-angiitus obliterans. By H. Bekuhrs. 1942. In German.	$2.50
9840-9893 PB M 74684	Stenoses of the larynx in cases of diphtheria, measles, influenza, and pseudo-croup and their treatment in the Department of Pediatry of the Academy of Medicine at Düsseldorf from January 1936 - September 1942. By H. Jung. 1942. In German.	5.50
9894-9926 PB M 74684	Death in the bath tub with regard to criminology. By H. Neuhaus. 1944. In German.	3.50
9927-9975 PB M 74684	Genesis of unilateral exophthalmos. By G. Heinemann. 1942. In German.	5.00
9976-9999 I PB M 74684	Bilateral contraction of the plantar aponeurosis together with Dupuytren's contraction of the palm. By H. Hinderfeld. n.d. In German.	3.00
1-27 PB M 74684	Late symptoms of spondylitis tuberculosa (Re-examinations of cases observed in the orthopedic department of the Academy of Medicine, Düsseldorf). By J. Hellhake. n.d. In German.	3.00

28-48 PB M 74684 — The growth of gas gangrene bacteria in dependence on the composition of the culture medium with addition of sulfonamides. By A. Schwarps. n.d. In German. 2.50

49-73 PB M 74684 — Possibilities for the use of plastics ("Paladon," "Palapont") instead of rubber for maxillofacial prosthetics and orthopedia. By R. Bernsmüller, n.d. In German. 2.50

74-131 PB M 74684 — Quantitative determination of the constituents of skin fat with regard to the neutralization of the alkali and the most recent bath in which soap was used. By G. Bergmann. n.d. In German. 6.00

133-172 PB M 74684 — Influencing the activity of histaminase by putrescine in vitro and in vivo. A contribution to the problem of intestinal autointoxications. By M. Kuppers. n.d. In German. 4.50

173-206 PB M 74684 — The constancy of occurrence of the types of diphtheria bacteria and changes of the type. By I. Philippi. n.d. In German. 3.50

207-237 PB M 74684 — Death by being run over by a train. By K. Sutor. n.d. In German. 3.50

238-281 PB M 74684 — Functional limits in cases of transplantations. By F. Funke. 1944. In German. 4.50

282-348 PB M 74684 — The Finnish "Sauna bath". By T. Klausmann. n.d. In German. 7.00

349-392 PB M 74684 — The drinking water supply of the city of Ebeydt. By O. Kreth. n.d. In German. 4.50

393-446 PB M 74684 — Studies on growth proportions of pynic and leptosomatic individuals by means of full size X-ray pictures. By F. Schmidt. n.d. In German. 5.50

447-464 PB M 74684 — Is it possible to extinguish diphtheria bacteria in diphtheria carriers by blowing "Marfanil" - powder into the naso-pharynx? By G. Luft. n.d. In German. 2.00

465-484 PB M 74684 — Liver function tests in patients with dermatosis. By W. Hermanns. 1940. In German. 2.00

485-526 PB M 74684 — The detection of Koc. tuberculosis by means of fluorescence microscopy; results of this method and experiments for its improvement. By H. Heidbuchel. n.d. In German. 4.50

527-547 PB M 74684 — Irradiation results in cases of carcinoma of the collum uteri with special regard to irradiation of the parametrium. By I. Greber. n.d. In German. 2.50

548-590 PB M 74684 — Increase in the number of slight, cured inflammations of the mitral valve and in the number of thromboses and of embolism, and a comparison of these phenomena based on postmorten records of the pathological institute of Düsseldorf. By G. Hähnel. 1938. In German. 4.50

591-633 PB M 74684 — Traffic accident or sudden death! By H. Heimannsberg. 1942. In German. 4.50

634-664 PB M 74684 — Active immunization in scarlet fever. By W. Hörstgen. 1942. In German. 3.50

665-719 PB M 74684 — Critical essay on pregnancy beyond term. By E. de Haas. 1942. In German. 5.50

PB M 70045. ERLANGEN, GERMANY. UNIVERSITY.
A collection of doctors' theses. (FIAT Microfilm Reel C 208, Frames 1023-1932) 1939. 909 f. Price: Microfilm-$6.00 - Enlargement print-$91.00.
The titles of the 60 theses reproduced on this FIAT microfilm reel are listed below. These items will be available as enlargement prints only. Please include PB and frame numbers when ordering particular theses from this microfilm reel. In German.

Frames	Title	Price
1023-1034 PB M 70045	Caesarian section in patients with fever. By K. Clevermann. 1939. In German.	$1.50
1035-1043 PB M 70045	Changes in the content of fat, water and dry substance in the adipose tissue of rats under different conditions of nutrition. By E. Cremer, 1939. In German.	1.50
1044-1055 PB M 70045	Youth and eye diseases. By E. Dalhoff. 1939. In German.	1.50
1056-1066 PB M 70045	The so-called scalenus-anticus syndrome. By E. Deckwirth. 1939. In German.	1.50
1067-1094 PB M 70045	Tooth fever. (A critical examination of literature). By G. Derige. 1939. In German.	3.00
1095-1107 PB M 70045	Causes of exudates and empyemata which develop in artificial pneumothorax. By H. Diestelkamp. 1939. In German.	1.50
1108-1115 PB M 70045	Placental septa and their importance for the division of the cotyledons. By H. Dietrich. 1939. In German.	1.50
1116-1130 PB M 70045	Studies on paradentonathias and administration of l-ascorbic acid carried out in twins. By H. Dittmar. 1939. In German.	1.50
1131-1154 PB M 70045	Incubation and contagiosity of measles. By E. Dolega. 1939. In German.	2.50
1155-1224 PB M 70045	Normal and pathological anatomy of the nucleus amygdalae region. By H. Brockhaus. 1939. In German.	7.00
1225-1236 PB M 70045	Progress in the X-ray diagnosis of bronchial carcinomata by means of bronchography together with layer representation and stereoscopy. By W. Dreyer. 1939. In German.	1.50
1237-1254 PB M 70045	Speed of penetration of various bacteria into organs and muscles. By H. Ebell. 1939. In German.	2.00
1255-1286 PB M 70045	The treatment of injuries of hand and finger tendons and its curative results. By E. Eckert. 1939. In German.	3.50
1287-1324 PB M 70045	The influence of fruit and vegetables on the vessels. By J. F. Eibisch. 1939. In German.	4.00
1325-1339 PB M 70045	A rare case of fatal gestosis in early pregnancy. By K. Ellermann. 1939. In German.	1.50
1340-1355 PB M 70045	Phimosis and phimotic carcinoma. By R. Engel. 1939. In German.	2.00
1356-1369 PB M 70045	Foot and mouth disease as a human mouth disease. By K. Engstler. 1939. In German.	1.50
1370-1380 PB M 70045	Late results of thoracoplasty. By M. Ernst. 1939. In German.	1.50
1381-1392 PB M 70045	Etiology, involution and outcome in cases of cephalhematoma neonatorum. By F. R. Erhardt. 1939. In German.	1.50

1393-1416 PB M 70045 — Calcium therapy of skin damages caused by dichlorodiethyl sulfide. By H. Ernert. 1939. In German. 2.50

1417-1428 PB M 70045 — Gas formation in a specific process. By M. Esders. 1939. In German. 1.50

1429-1443 PB M 70045 — Changes in weight of the patients of the Stubenrauch - Hospital of Lichterfelde (Berlin). By P. Evers. 1939. In German. 1.50

1444-1461 PB M 70045 — Decisions of the Department of Surgery of the "Charité" in the judgment of accidents regarding tuberculosis, osteomyelitis and tumor formation. By V. Evers. 1939. In German. 2.00

1462-1474 PB M 70045 — Two experimental dietetic studies. By Ewald. 1939. In German. 1.50

1475-1491 PB M 70045 — Promotion of blood-clotting by sodium cetyl sulfate. By H. J. Ext. 1939. In German. 2.00

1492-1503 PB M 70045 — Metabolic investigations for the determination of the dietetic value of sweet lupines with special regard to their proteins. By B. Fabricius, 1939. In German. 1.50

1504-1520 PB M 70045 — Experiences on the operative treatment of varicoceles gained at the hospital of Basel University. By H. H. Farb. 1939. In German. 2.00

1521-1537 PB M 70045 — The influence of rest and movement on the alimentary alcohol level of the blood. By W. Fehler. 1939. In German. 2.00

1538-1550 PB M 70045 — Clinical and roentgenological contribution to the problem of tuberculosis of the intrathoracic lymphatic glands of adults and its consequences. By H. J. Felsmann. 1939. In German. 1.50

1551-1566 PB M 70045 — Possibility of retrogression in cases of enlarged renal pelvis. By Shiu-Tu Feng. 1939. In German. 2.00

1567-1574 PB M 70045 — Pulmonary tuberculosis and diabetes. By A. Fett. 1939. In German. 1.50

1575-1583 PB M 70045 — The treatment of erysipelas with special regard to the parenteral therapy with milk protein. By W. Fiedler. 1939. In German. 1.50

1584-1592 PB M 70045 — "Indirect vaginal fixation" as an operative method for retroflexio uteri. By H. Finke, 1939. In German. 1.50

1593-1606 PB M 70045 — Hinton's reaction in blood and liquor with special regard to its importance for neurolues. By A. Fischer. 1939. In German. 1.50

1607-1617 PB M 70045 — Purine bases in the urine of people fed with uncooked food. By H. Fischer. 1939. In German. 1.50

1618-1628 PB M 70045 — The influence of proteins irradiated with X-rays on the value of the respiratory quotient and on basal metabolism. By J. Fischer, 1939. In German. 1.50

1629-1646 PB M 70045 — Treatment of infantile paralysis with fever-producing agents. By K. Fischer. 1939. In German. 2.00

1647-1672 PB M 70045 — Methods of blood transfusion in foreign countries. By M. L. Flindt. 1939. In German. 3.00

1673-1690 PB M 70045 — Contribution to the knowledge of multiple neuritic cutaneous gangrene. By H. E. Florstedt, 1939. In German. 2.00

1691-1699 PB M 70045 — The genesis of the sensations of pressure and vibrations. By H. R. Forster, 1939. In German. 1.50

1700-1705 PB M 70045 — Influence of irradiation with short waves on mice inoculated with granuloma bacteria. By I. Forster, 1939. In German. 1.50

1706-1725 PB M 70045 — Clinical-surgical contribution to the causalgia in the region of the nervus medianus. By K. Freudenhammer. 1939. In German. 2.00

1726-1734 PB M 70045 — The behavior of the placental villi in the eighth month of pregnancy. By E. Freye. 1939. In German. 1.50

1735-1749 PB M 70045 — Amplitude differences in cases of miners' nystagmus. By W. Friedrich. 1939. In German. 1.50

1750-1765 PB M 70045 — Observations on the effect of digitaline nativelle. By I. Frohlich. 1939. In German. 2.00

1766-1778 PB M 70045 — Relations between serum administration and early and late complications of the different forms of diphtheria. By C. E. Fromberg. 1939. In German. 1.50

1779-1788 PB M 70045 — Hypertonia in cases of diphteria. By I. Fromm. 1939. In German. 1.50

1789-1798 PB M 70045 — Contribution to the plastic covering of skull defects (Alloplasty with Horn). By P. Frommherz. 1939. In German. 1.50

1799-1809 PB M 70045 — Suitability of the dry blood reaction as a rapid test for lues, used in outpatient departments. By H. Funke. 1939. In German. 1.50

1810-1830 PB M 70045 — The problem of the active principle of calcium. By D. Gade. 1939. In German. 1.50

1821-1831 PB M 70045 — Sequestration of anthracoid and petrified lymph nodes about the bifurcation with bronchial and esophagus fistula, an isolated pathological feature. By F. Gaggelmann. 1939. In German. 1.50

1832-1846 PB M 70045 — Nutrition of the population in the district of Kolberg. By A. Gaigl. 1939. In German. 1.50

1847-1854 PB M 70045 — Carcinomatous metastases within the cervical cord. By A. Gallus. 1939. In German. 1.50

1855-1864 PB M 70045 — The influence of artificial alkalosis on the efficiency of medium and long distance runners. By B. Galuba. 1939. In German. 1.50

1865-1875 PB M 70045 — The antitoxin-forming power of children after recovery from toxic diphtheria. By I. Gebhard. 1939. In German. 1.50

1876-1885 PB M 70045 — Appendicitis and its relation to liver abscesses. By K. Geese. 1939. In German. 1.50

1886-1893 PB M 70045 — Did the removal of corn-cockle seeds from bread cereals help in extinguishing leprosy at the middle ages? By K. Gehr. 1939. In German. 1.50

1894-1909 PB M 70045 — Comparative studies on the influence of casein and rye flour of 40% grinding, fed to rats in N-equimolecular amounts, on the urinary quotients carbon to nitrogen and "Vacat" oxygen to nitrogen. By P. Geissler. 1939. In German. 2.00

1910-1920 PB M 70045 — Urinary excretion of the gonadotropic hormone of anterior pituitary in man. By W. G. Gentzsch. 1939. In German. 1.50

Medical Research (contd)

1921-1932 PB M 70045 Observations on the Sertoli cells in the testes of man and rats. By V. George. 1939. In German. 1.50

PB M 73314. ERLANGEN, GERMANY. UNIVERSITY. A collection of doctors' theses. (FIAT Microfilm Reel C 237, Frames 8440-9402). 1939-1940. 662 f. Price: Microfilm-$6.00 - Enlargement Print-$66.50

This FIAT microfilm reel consists of 54 items dealing with several branches of medicine and dentistry. Individual items are listed below and will be available as enlargement prints only. The entire reel may be purchased in microfilm form for $6.00. Please include PB and frame number when ordering individual items from this microfilm reel. In German.

Frames	Titles	Price
8440-8451 PB L 73314	Reliability of the blood sedimentation test. By v. Kügelgen. 1940. In German.	$1.50
8452-8473 PB L 73314	Schizophrenia in childhood. By Kühne. 1940. In German.	2.50
8474-8487 PB L 73314	Galen on the different types of pulse beats. Second book, chapters 6 and 7, dealing with "diagnosis by examination of the pulse". By Kühnlein. 1940. In German.	1.50
8488-8501 PB L 73314	Rare metastasis in a case of cancer of the uterine body. By Kummert. 1939. In German.	1.50
8502-8512 PB L 73314	Herpes and trauma of the cornea. By Kyber. 1940. In German.	1.50
8513-8532 PB L 73314	Rupture of the pregnant tube in a case of attempted abortion by intrauterine injection. By Landmann. 1940.	2.00
8533-8553 PB L 73314	Multiple cartilaginous exostoses. By Lang. 1939. In German.	2.50
8554-8563 PB L 73314	The treatment of fractures of the femoral shaft and its results. By Lange. 1940. In German.	1.50
8564-8575 PB L 73314	A rare localization of endometriosis at the appendix. By Langeheim. 1939. In German.	1.50
8576-8588 PB L 73314	Translation of and comments on the "Essay d'Odontotechnic ou Diss. sur les dents artificielles" by Claude Monton, Paris 1746. By Langener. 1940. In German.	1.50
8589-8604 PB L 73314	Medicostatistical studies on the occurrence of scabies. By Laprell. 1940. In German.	2.00
8605-8617 PB L 73314	First care of wartime gunshot-injuries of the large vessels. By Graf v. La Rosée. 1940. In German.	1.50
8618-8631 PB L 73314	The dangers of endocardiac injections and their evaluation from the standpoint of forensic medicine. Report of three cases. By Lehmann. 1940. In German.	1.50
8632-8637 PB L 73314	Seasonal influence on the phase onset of manic-depressive psychoses. By Leuthold. 1939. In German.	1.50
8638-8648 PB L 73314	Complete failure of zephirol and other observations in the disinfection of excretions. By Lex. 1939. In German.	1.50
8649-8664 PB L 73314	Gastroenterostomy in cases of gastric cancer. By Lichtschlag. 1940. In German.	2.00
8665-8682 PB L 73314	Healing of cystic tumors occurring after bone fractures. By Lisau. 1940. In German.	2.00
8683-8704 PB L 73314	The present situation of irradiation therapy in the management of myomata. Results of irradiation treatment of myomas practiced in the University Women's Hospital, Munich, in the period 1925 - 1934. By Lindstädt. 1940. In German.	2.50
8705-8719 PB L 73314	The present state of x-ray treatment of the sympathetic nervous system. By Löffler. 1940. In German.	1.50
8720-8729 PB L 73314	Self-healing of a hypernephroid tumor. By Lorenz. 1940. In German.	1.50
8730-8743 PB L 73314	A case of severe malformation of the left lung: Congenital cystadenoma in a premature between the eight and ninth months, associated with congenital dropsy. By Lotter. 1940. In German.	1.50
8744-8763 PB L 73314	The carotid glomus (paraganglion caroticum). By Luckew. 1940. In German.	2.00
8764-8804 PB L 73314	Treatment of fractures of the neck of the femur, particularly of the medial ones, in the course of the centuries. By Lüttje. 1940. In German.	4.50
8805-8825 PB L 73314	Study of the syphilitic diseases of the auditory organ, based on an actual case. By Lutz. 1940. In German.	2.50
8826-8840 PB L 73314	Galen's manual of the pulses. By Lutz. 1940. In German.	1.50
8841-8859 PB L 73314	Treatment of residual cavities resulting from empyema. By Maack. 1940. In German.	2.00
8860-8883 PB L 73314	Studies concerning urinary constants after test meals, with special attention to patients with gastric cancer. By Pasching. 1940. In German.	2.50
8884-8906 PB L 73314	Ocular characteristics in twins and their significance for distinguishing uniovular and binovular twins. By Janke. 1940. In German.	2.50
8907-8917 PB L 73314	Increasing the endurance of altitudes by adaptation. By Kottenhoff. 1940. In German.	1.50
8918-8947 PB L 73314	Transformation, dystrophy and atrophy of limbs (so-called "sudeck's bone atrophy"). By Maurer. 1940. In German.	3.00
8948-8981 PB L 73314	Transurethral electrosurgical resection of the prostate. By Reiser. 1940. In German.	3.50
8982-9000 PB L 73314	Contributions to the functional significance of embryonic organs. By Schneider. 1940. In German.	2.00
9001-9029 PB L 73314	Quantitative relations hips between the intensity of flow and the pressure of normal circulation, with the elasticity of the arterial air-chamber varying intermittently. By Wetterer. 1940. In German.	3.50
9030-9031 PB L 73314	The basic substractives of the brain. By E. Müller. 1939. In German.	1.50
9032-9051 PB L 73314	The treatment of arthrosis deformans. By März. 1940. In German.	2.00

9052-9065 PB L 73314 — The health conditions of the mother-of-pearl button workers at Bärnau. By Maier. 1939. In German. 1.50

9066-9077 PB L 73314 — Congenital defect of the femur. By Maier. 1940. In German. 1.50

9078-9107 PB L 73314 — Early or late marriage from the point of view of the national socialistic population policy. By Marquart. 1939. In German. 3.00

9108-9131 PB L 73314 — The anamnesis of patients with perforated gastric ulcer. By Matissek. 1939. In German. 2.50

9132-9141 PB L 73314 — Osteoma of the lumbar spine. By Matz. 1940. In German. 1.50

9142-9161 PB L 73314 — Operations of harelips, palatal clefts, and other facial operations. By Maurer. 1939. In German. 2.00

9162-9183 PB L 73314 — Etiology of diseases of the sublingual gland, their course and treatment. By Maurer. 1939. In German. 2.50

9184-9197 PB L 73314 — Contribution to the symptomatology and treatment of sarcomas of the retothelium. Report of 7 cases. By May. 1939. In German. 1.50

9198-9205 PB L 73314 — Studies of the fluorine content of drinking water in Bavarian goiter districts where the endemics occur with varying intensity. By May. 1939. In German. 1.50

9206-9219 PB L 73314 — Do transfused red blood cells remain intact in the receiver and do they participate in the gaseous metabolism? By Mayer. 1940. In German. 1.50

9220-9234 PB L 73314 — Nature, causes and diagnostic significance of symmetrical foci of malacia in the globus pallidus following carbon monoxide poisoning. Report of three cases. By Meissinger. 1940. In German. 1.50

9235-9248 PB L 73314 — Cholesterol and other sterols in metabolism. By Meissner. 1939. In German. 1.50

9249-9269 PB L 73314 — Bone fractures and their treatment as observed during 1928-1936. First part: Fractures of the trunk. By Meissner. 1939. In German. 2.50

9270-9282 PB L 73314 — Re-examinations of fractures of the shaft of the humerus. By Meissner. 1940. In German. 1.50

9283-9296 PB L 73314 — Tooth extraction and local anesthesia. By Meres. 1940. In German. 1.50

9297-9333 PB L 73314 — Statistics on "Primary Anemias" observed in the period 1926-1935. By Merkle. 1939. In German. 4.00

9334-9364 PB L 73314 — Bone fractures and their treatment as observed during 1928-1936. Third part: Fractures of the lower extremities. By Nettler. 1939. In German. 3.50

9365-9383 PB L 73314 — Contribution to knowledge of porencephalia. By Meyer. 1940. In German. 2.00

9384-9402 PB L 73314 — 25 Cases of trichinosis observed during the war. By Michaelis. 1939. In German. 2.00

PB M 73880. ERLANGEN, GERMANY, UNIVERSITY. A collection of doctors' theses. (FIAT Microfilm Reel I 245, Frames 6953-7883) 1939-1941. 930 f. Price: Microfilm-$6.00 - Enlargement print-$93.00. This FIAT microfilm reel consists of 46 items in various branches of medicine. The material was obviously seized in the library of the above university. Individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
6953-6963 PB M 73880	Differentiation of the coli aerogenes group. By Englert. 1941. In German.	$1.50
6964-6973 PB M 73880	Contribution to the problem of the course and outcome of schizophrenic processes. By Dietlein. n.d. In German.	1.50
6974-6993 PB M 73880	Extract of Hamamelis as a remedy for affections of the mucous membranes of the mouth and for premanatory treatment and root-fillings, in diseases of the root-membrane. By Claa. 1940. In German.	2.00
6994-7012 PB M 73880	Contribution to the differential diagnosis of hereditary epilepsy and epileptic fits in the presence of brain tumors, as applied for certifying before the "Erbgesundheitsgericht". By Braun. 1941. In German.	2.00
7013-7055 PB M 73880	Open pulmonary tuberculosis in children below ten years of age. By Birkenfeld. 1940. In German.	4.50
7056-7101 PB M 73880	The blood sedimentation test in venereology. By Enggenhofer. 1939. In German.	5.00
7102-7110 PB M 73880	The possibility of stereoscopic vision in stereoscopic x-ray pictures. By Reinhardt. 1939. In German.	1.50
7111-7127 PB M 73880	Influence of season and weather on the occurrence of death, studied on the basis of dissection material of the pathological institute of the Nuremberg general hospital, during 1936-1939. By Post. 1940. In German.	2.00
7128-7147 PB M 73880	Surgical methods applied for the correction of hypospadia, and the results achieved thereby (historical survey). By Ponnath. 1940. In German.	2.00
7148-7162 PB M 73880	Result and course of the Takata test in blood serum, in diseases of the liver and bile ducts. By Ponner. 1939. In German.	1.50
7163-7181 PB M 73880	Statistics on patients treated in the hospital and the out-patients department for dermatological and venereal diseases of Erlangen University from Jan 1, 1931 to Dec 31, 1938. By Plitt. In German.	3.00
7182-7203 PB M 73880	Treatment of cancer of the eye-lid: statistical study of the cases of the ophthalmological department of Erlangen University. By Phermakidis. 1939. In German.	2.50
7204-7224 PB M 73880	Malaria therapy of neurosyphilis and chronic gonorrhea. By Pfister. 1940. In German.	2.50
7225-7237 PB M 73880	Investigations into the electrocardiograms of healthy individuals breathing mixtures poor in oxygen. By Müller. 1940. In German.	1.50
7238-7255 PB M 73880	Cancer of the uterine cervix in younger women. By Meyer. 1940. In German.	2.00

7256-7276 PB M 73880 Consideration of the time factor in Samuel Hahnemann's therapy. By Metzger. 1939. In German. 2.50

7277-7302 PB M 73880 Schizophrenia and exogenous noxae. By Mengel. 1940. In German. 3.00

7303-7416 PB M 73880 Discussion of various new local statistics on the occurrence of cancer. By Meinel. 1940. In German. 11.50

7417-7431 PB M 73880 Symptomatology and therapy of thallium poisoning. By Marx. 1940. In German. 1.50

7432-7445 PB M 73880 Rare mycoses of the skin (with a compilation of primary mycoses in which Penicillium glaucum or molds similar to Penicillium could be detected). By Lerner. 1940. In German. 1.50

7446-7455 PB M 73880 A case of cystic tumor of the pituitary duct (Rathke's pouch). By Lechinger. 1940. In German. 1.50

7456-7465 PB M 73880 The problem of traumatic dislocations of the hip joint in the new-born. By Kroll. 1939. In German. 1.50

7466-7481 PB M 73880 37 cases of death resulting from acute otitis media. By Kolb. 1940. In German. 2.00

7482-7493 PB M 73880 Roentgenstereoscopic measurements of the depths of the soft parts in the median plane of the face, in 20 young females. By Kästler. 1940. In German. 1.50

7494-7506 PB M 73880 Dyroff's modification of Madlener's sterilization (by tubectomy) and its results. By Koch. 1940. In German. 1.50

7507-7519 PB M 73880 The pathogenesis of headache. By Klobe. 1939. In German. 1.50

7520-7535 PB M 73880 Results of the sewing-over of perforated gastric and duodenal ulcers in the municipal hospital of Nuremberg, during 1925-1938. By Klimesch. 1940. In German. 2.00

7536-7558 PB M 73880 Final results of choledochoduodenostomy (with consideration of 9 cases treated in the municipal hospital of Fürth and 16, treated in the surgical department of the Erlangen University hospital). By Kleinlein. 1940. In German. 2.50

7559-7588 PB M 73880 On smoking: an addiction and its cure. By Klarner. 1940. In German. 3.00

7589-7600 PB M 73880 Contribution to the knowledge of rhinogenous orbital cellulitis. By Keller. n.d. In German. 1.50

7601-7613 PB M 73880 Examination of electrocardiograms concerning the relations between the rate of heart beat and the conduction time. By Kästel. 1940. In German. 1.50

7614-7630 PB M 73880 Tuberous sclerosis; a clinical and genealogical contribution. By Hub. 1939. In German. 2.00

7631-7645 PB M 73880 Power of hearing following radical operation of the middle ear (with the exclusion of cases with labyrinth complications). By Hofknecht. 1940. In German. 1.50

7646-7653 PB M 73880 Contribution to the morphology and endocrinology of chorionepitheliomata in males. By Horstebrock. 1940. In German. 1.50

7654-7667 PB M 73880 A new German therapeutical mud: experiences with regard to its usefulness in various skin diseases and as an ointment base (poor in fat content or almost free from fat) for the incorporation of drugs. By Hergenroether. 1939. In German. 1.50

7668-7685 PB M 73880 Brain tumor, multiple deformities and primary mental disorders. By Grillenberger. 1940. In German. 3.00

7686-7709 PB M 73880 Frequency and clinical significance of noxae of the umbilical cord. By Graupner. 1939. In German. 3.50

7710-7747 PB M 73880 The racial aspect of Hartenstein (Fränkische Alb). By Götz. 1939. In German. 4.00

7748-7760 PB M 73880 Relationship between pituitary gland and carbohydrate metabolism. By Friedel. 1940. In German. 1.50

7761-7778 PB M 73880 A case of chronic uveitis with dysacusis and poliosis, and compilation of similar cases known thus far. By Fleischer. 1940. In German. 2.00

7779-7795 PB M 73880 "Fauly's Mährpeise" (baby food) in the nutrition of ill infants and young children. By Findeiss. 1940. In German. 2.00

7796-7814 PB M 73880 Why does the stork bring the babies? By Filitz. 1940. In German. 2.00

7815-7828 PB M 73880 Dermatoses of pregnancy and description of a peculiar case of dermatosis of pregnancy, which, in clinical respect, greatly resembled impetigo herpetiformis. By Ryselein. 1939. In German. 1.50

7829-7845 PB M 73880 Contribution to the etiology of spontaneous rupture of the uterus during pregnancy and childbirth. By Ebert. 1940. In German. 2.00

7846-7867 PB M 73880 Mastitis and its treatment, with special consideration of Mintz's x-ray therapy. By Dürr. 1940. In German. 2.50

7868-7883 PB M 73880 Discussion of a case of erythrodermia leucaemica lymphatica. By Cabolet. 1939. In German. 2.00

PB M 73340. FREIBURG, GERMANY. UNIVERSITY. A collection of doctors' theses. (FIAT Microfilm Reel M 67, Frames 5597-6440) 1941-1943. 943 f. Price: Microfilm-$6.00 - Enlargement print-$94.50.
This FIAT microfilm reel consists of 19 items dealing chiefly with medical subjects. The material was obviously seized in the library of the above university. Individual items are listed below and will be available as enlargement prints only. The entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
5597-5612 PB M 73340	Morphological investigations on the pituitary gland of the blue whale (Balaenoptera Sibaldii). By Graf. 1943. In German.	$ 2.00
5613-5658 PB M 73340	Life expectancy of patients with failures of the mitral valve. By Grundler. 1942. In German.	5.00
5659-5713 PB M 73340	The physiological bases of hydrotherapy for patients with circulatory diseases. By Osterwalder. 1942. In German.	5.50

5714-5751 PB M 73340 — Pathology and symptomatology of malignant goiter. By Charles. 1942. In German. 4.00

5752-5795 PB M 73340 — Injuries to joints by gunshot and shell splinters during the offensive in the west, May-June 1940. By Eisert. 1941. In German. 4.50

5796-5836 PB M 73340 — Experiments to demonstrate the adhesive power of ointments and ointment bases. By Keussen. 1943. In German. 4.50

5837-5876 PB M 73340 — Clinical investigations on the effect of prostigmine on impaired hearing and tinnitus. By Miermann. 1943. In German. 4.00

5877-5904 PB M 73340 — Relationship between cryptogenic peritonitis and scarlet fever epidemics. By Stinner. 1943. In German. 3.00

5905-5934 PB M 73340 — The problem in Franz Anton Mesmer's M.D. thesis "De Planetarum Influxu" 1766. By Bertsche. 1942. In German. 3.00

5935-5963 PB M 73340 — pH measurements in the blood of people with healthy skin, carried out by means of a low-resistance Jena-glass electrode and a specially constructed cell according to Schmidt-Rudolphi. By Golms. 1943. In German. 3.00

5964-6000 PB M 73340 — Influence of washed red blood cells, hemoglobin and erythrocyte stromata on the hemopoietic tissue. By Lassen. 1941. In German. 4.00

6001-6096 PB M 73340 — Discussion of cases as a contribution to the etiology of mongolism. By Stepf. 1943. In German. 10.00

6097-6121 PB M 73340 — The weak-sighted eye, its endangering and possibilities for its improvement if the normal eye is lost. By Völkel. 1943. In German. 2.50

6122-6208 PB M 73340 — Results of the surgical treatment of myomata in the Department of Gynecology of Freiburg University, during 1934-1940. By Walter. 1942. In German. 9.00

6209-6279 PB M 73340 — Investigations on the amount of light utilized in sensitized photographic films. By Wilcke. 1941. In German. 7.50

6280-6306 PB M 73340 — The cleaning power of detergents which are not harmful to the skin, tested on four ointment bases. By Adler. 1943. In German. 3.00

6307-6332 PB M 73340 — The cleaning power of detergents which are not harmful to the skin tested on various ointment bases. By Dietz. 1943. In German. 3.00

6333-6393 PB M 73340 — The constrictor muscles of the pharynx and their functions in the act of swallowing. By Kästner. 1943. In German. 6.50

6394-6440 PB M 73340 — Examination of a family in a case of so-called "sporadic" paroxysmal paralysis. By Kalden. 1942. In German. 5.00

PB M 73341. FREIBURG, GERMANY. UNIVERSITY. A collection of doctors' theses. (FIAT Microfilm Reel M 68, Frames 6441-7338) 1939-1943. 897 f. Price: Microfilm-$6.00 - Enlargement Print-$90.00

This FIAT microfilm reel consists of 20 items dealing with various branches of medicine. The material was obviously seized in the library of the above institute. Individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
6441-6488 PB M 73341	Contribution to the statistics of aneurysms including several special cases. By Matthes. 1943. In German.	$5.00
6489-6574 PB M 73341	The ideal treatment of gunshot aneurysms with suturing of the vessel and with vessel grafting. By Ritter. 1943. In German.	2.00
6575-6614 PB M 73341	X-ray pictures of the lungs in Bernier-Roeck-Schaumann's disease. By Scheuerl. 1943. In German.	4.00
6615-6646 PB M 73341	Results of recent research on vitamin metabolism and importance for skin diseases. By Triebel. 1942. In German.	3.50
6647-6686 PB M 73341	Injuries to the eyes contracted in sports. By Völkel. 1943. In German.	4.00
6687-6707 PB M 73341	Complications of pylorospasm in infants. By Brandt. 1943. In German.	2.50
6708-6738 PB M 73341	Investigations on metabolism in cases of paroxysmal paralysis. By Jantz. 1939. In German.	3.50
6739-6763 PB M 73341	A case of gangrene of the extremities in an infant. By Kocher. 1943. In German.	2.50
6764-6804 PB M 73341	The effect of remedies, which reduce congestion of the mucous membranes on the air passage in the nose. By Meyer. 1943. In German.	4.50
6805-6866 PB M 73341	The effect of feeding dried organs on growth and development of larvae from Bombinator and Bufo vulgaris, with special consideration of the thymus effect. By Ritgen. In German.	6.50
6867-6901 PB M 73341	pH measurements of blood in cases of skin diseases. By Goldschlager. 1943. In German.	3.50
6902-6951 PB M 73341	Experimental influencing of the internal pressure in human muscles. By Becker. 1942. In German.	5.00
6952-6988 PB M 73341	Erythema exsudativum multiforme necroticans, a contribution to the morbid features of erythema exsudativum multiforme Hebrae. By Berthold. 1943. In German.	4.00
6989-7036 PB M 73341	Blastomycoses of bones. By Bessel. 1942. In German.	5.00
7037-7134 PB M 73341	The filling of the bronchioles in bronchography. By Böttger. 1941. In German.	10.00
7135-7158 PB M 73341	Contribution to the differential diagnosis of metastatic tumors of the lungs. By Liebel. 1943. In German.	2.50
7159-7187 PB M 73341	Usefulness of Chodisk's dried blood test for the diagnosis of syphilis in prenatal care. By Lippert. 1943. In German.	3.00

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7188-7249 PB M 73341 — Investigations of the behavior of the tension phase and expulsion phase of heart contraction in healthy people and in those with beginning circulatory disorder. By Molls. 1943. In German. 6.50

7250-7291 PB M 73341 — Progress in the treatment of disturbances of peripheral blood circulation. By Roos. 1943. In German. 4.50

7292-7338 PB M 73341 — The problem of perilunar dorsal dislocation. By Zunker. 1943. In German. 5.00

PB M 73342. FREIBURG, GERMANY. UNIVERSITY. A collection of doctors' theses. (FIAT Microfilm Reel M 69, Frames 7339-8264) 1941-1943. 897 f. Price: Microfilm-$6.00 - Enlargement print-$90.00 This FIAT microfilm reel consists of 19 items in various branches of medicine. The material was obviously seized in the library of the above university. Individual items are listed above and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
7339-7379 PB M 73342	Postoperative lung complications observed in the surgical department of the Freiburg University Hospital from 1932 through 1941. By Fischer. 1942. In German.	$ 4.00
7380-7412 PB M 73342	Subcutaneous muscular tears. By Gusek. 1942. In German.	3.50
7413-7441 PB M 73342	Chronic subdural traumatic hematoma. By Hillringhaus. 1943. In German.	2.00
7442-7535 PB M 73342	Contribution to the history of myelitis. By Frieling. 1943. In German.	9.50
7536-7572 PB M 73342	The fertility of women after operative deliveries, i.e., a caesarean section, forceps and version. By Fuchs. 1941. In German.	4.00
7573-7586 PB M 73342	Influence of prolonged doses of betaxin on the blood sugar-lowering effect of insulin in rabbits. By Heitzmann. 1943. In German.	1.50
7587-7632 PB M 73342	Symptomatology and casuistics of subarachnoidal hemorrhages. By de Camp. 1942. In German.	5.00
7633-7669 PB M 73342	Menstrual disorders following legal sterilization. By Früchte. 1941. In German.	4.00
7670-7784 PB M 73342	Experiments for treating pulmonary tuberculosis with inhalation of colloidal carbon. By Hoven. 1943. In German.	1.50
7785-7838 PB M 73342	Experimental investigations on the detection of antibacterial inhibitive and mutative substances (inhibins and mutins) in fresh normal urine by applying the shaking method. By Fundt. 1943. In German.	5.50
7839-7904 PB M 73342	Method of protective inoculation against typhus. By Richter. 1942. In German.	6.50
7905-7959 PB M 73342	Examination of discharge from the ear for an objective determination of the progress of acute otitis media. By Traub. 1943. In German.	5.50
7960-8009 PB M 73342	Relationship between infections and instability of the sympathetic nervous system, as observed in actual cases. By Weissenborn. 1943. In German.	5.00
8010-8080 PB M 73342	Pellagra and pellagroid symptoms of the skin. By Kwoczek. 1942. In German.	7.50
8081-8112 PB M 73342	Behavior of the uterus in childbed. Disturbances of involution, with special regard to those caused by placental and decidual remnants. By Mübell. 1943. In German.	3.50
8113-8137 PB M 73342	Malignant tumors of the kidneys in children. By Lorens. 1943. In German.	2.50
8138-8198 PB M 73342	Contribution to the question of irradiation treatments of inoperable cancers of the stomach. By Otten. 1943. In German.	6.50
8199-8264 PB M 73342	Differential diagnosis of tuberculosis of the lower lumbar spine and the iliosacral joints, with special consideration of false diagnoses in men fit for military service. By Reese. 1942. In German.	7.00

PB M 73936. NORWIG, CHARLES F. W. The duodenum contortum. (FIAT Microfilm Reel A 67, Frames 1-6). 1947. 6 f. Price: Microfilm-$1.00 - Enlargement Print-$1.50 This film contains the description of an anomaly of the duodenum not yet published thus far. The paper is hardly legible.

METALS AND METAL PRODUCTS

PB L 74629. AACHEN, GERMANY. TECHNISCHE HOCHSCHULE. Dissertations on machine shop practice. (FIAT Microfilm Reel L 105, Frames 1-469) 1937-1943. 469 f. Price: Microfilm-$5.50 - Enlargement Print-$47.00 This reel was prepared by FIAT investigators in Germany. Individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
1-20 PB L 74629	Investigation of cast iron and plastic machine tool sliding beds with regard to wear and tear, and corrosion By H. Opitz and K. Hertel. n.d. In German.	$2.50
21-95 PB L 74629	Investigating wear and tear and the sliding property of cast iron sliding beds considering the shape and hardness of the bed. By Ernst Tisken. 1943. In German.	7.50
96-179 PB L 74629	The "Zweistahl" method of "Gottwein-Reichel." By Günter Zipp. 1937. In German.	6.50
180-193 PB L 74629	Cutting tests with chromium-molybdenum steels by means of emulsions in comparison with a cutting oil. 1940. In German.	1.50
194-295 PB L 74629	Investigation of two chromium-nickel steels of various structure with regard to machinability. By Bruno Schrewe. 1939. In German.	11.50
296-313 PB L 74629	Efficiency test of five high-speed steel types.. 1937. In German.	2.00

314-324 PB L 74629 — Tests concerned with roller burnishing of sliding beds by means of the "Iwascheff" process. 1939. In German. 1.50

325-337 PB L 74629 — Method and device for machining plane cast work pieces. Patent application I 57757 XII/67. By Iwascheff. 1938. In German. 1.50

338-422 PB L 74629 — Tests with a surface grinder, investigating the functioning and operation at the grinding of steel concerned with tool, workpiece and machinery. By H. Spiess. 1940. In German. 8.50

423-469 PB L 74629 — Grinding tests investigating the wear and tear of the grinding disc. n.d. In German. 5.00

PB L 74663. GÖTZE-WERKE A. G., BURSCHEID, GERMANY. Test reports of piston rings. (FIAT Microfilm Reel L 131, Frames, 3895-4690) 1939-1946. 796 f. Price: Microfilm-$6.00 - Enlargement print-$80.00.
This reel was prepared by FIAT investigators in Germany. 64 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
3895-3910 PB L 74663	Rolled cast iron piston rings made of two different materials. 1944. In German.	$ 2.00
3911-3914 PB L 74663	Testing a piston ring blank. 1943. In German.	1.50
3915-3918 PB L 74663	Specimen of rolled cast iron. 1943. In German.	1.50
3919-3927 PB L 74663	Piston rings of rolled cast iron undergoing a test run. 1943. In German.	1.50
3928-3937 PB L 74663	Piston ring blanks. 1943. In German.	1.50
3938-3945 PB L 74663	Rolled cast iron blank for piston rings. 1943. In German.	1.50
3946-3950 PB L 74663	Specimen of malleable cast iron. 1942. In German.	1.50
3951-3970 PB L 74663	Specimen for analytical purposes. 1942. In German.	2.00
3971-3976 PB L 74663	Testing of centrifugally cast piston rings. 1942. In German.	2.00
3977-3994 PB L 74663	Piston rings and pistons with a high content of C and low content of Si. 1942. In German.	2.00
3995-3999 PB L 74663	Piston rings made of centrifugal castings. 1942. In German.	1.50
4000-4004 PB L 74663	Cast four-sided bars for rolling tests. n. d. In German.	1.50
4005-4012 PB L 74663	Specimens made by centrifugal casting. 1942. In German.	1.50
4013-4017 PB L 74663	Alloying tests of "Goetze" standard material with Al under Bauxit slag. 1942. In German.	1.50
4018-4026 PB L 74663	Piston ring blanks manufactured from beads. 1942. In German.	1.50
4027-4031 PB L 74663	Sintered stampings. 1942. In German.	1.50
4032-4044 PB L 74663	Melting specimens. 1941. In German.	1.50
4045-4056 PB L 74663	Investigating broken pieces of rolled piston ring blanks. 1941. In German.	1.50
4057-4080 PB L 74663	Examination of rolled specimens. 1942. In German.	2.00
4081-4087 PB L 74663	Sinter iron from the "Goetze" laboratory. 1942. In German.	1.50
4088-4103 PB L 74663	Testing of pressed bodies. 1942. In German.	2.00
4104-4121 PB L 74663	Melting of piston ring material. 1942. In German.	2.00
4122-4128 PB L 74663	Cupola furnace tests. n. d. In German.	1.50
4129-4169 PB L 74663	Foundry waste in the production of single cast piston rings. 1946. In German.	4.50
4170-4186 PB L 74663	Calculatory investigation of checking prescribed tangential stresses utilising mass tolerances in mechanical production. 1943. In German.	2.00
4187-4209 PB L 74663	Repeated impact tests with rolled cast iron. 1944. In German.	2.50
4210-4227 PB L 74663	Tension tests with piston rings in the electric furnace at 600° with a specially developed testing device. 1943. In German.	2.00
4228-4241 PB L 74663	Tension tests at high furnace temperature and short annealing periods. 1943. In German.	1.50
4242-4253 PB L 74663	Single-cast piston rings centrifugally cast in sand. 1943. In German.	1.50
4254-4260 PB L 74663	Testing of two compression rings and a fire ring of steel. 1944. In German.	1.50
4261-4266 PB L 74663	The usefulness of various polishing agents. 1944. In German.	1.50
4267-4277 PB L 74663	Investigation of 5 thermally stressed piston rings and 5 naturally stressed piston rings. 1944. In German.	1.50
4278-4319 PB L 74663	The relationship of various hardness testing methods in the testing of individual castings. 1944. In German.	4.50
4320-4330 PB L 74663	Sintering tests with iron powders. 1944. In German.	1.50
4331-4337 PB L 74663	The sharpness of microphotographs at 500 power. 1944. In German.	1.50
4338-4348 PB L 74663	Electric resistances made of their own and outside manufactured grey cast iron. 1945. In German.	1.50
4349-4359 PB L 74663	Hardness and wear and tear of simple cast material and bushing cast material following annealing at various temperatures and for various durations. 1941. In German.	1.50
4360-4363 PB L 74663	Investigation of an "Argus" brake segment. 1944. In German.	1.50
4364-4376 PB L 74663	Testing of piston rings from a "Kühne" motor. 1943. In German.	1.50
4377-4393 PB L 74663	Survey of previous test results concerned with the tangential stress of piston rings. 1944. In German.	2.00

4394-4406 PB L 74663 — Piston rings low in C and high in Si stressed at various temperatures. 1942. In German. 1.50

4407-4408 PB L 74663 — Comparative tests of a compression ring with and without "Mola" layer and a "Burscheider" ring. 1941. In German. 1.50

4409-4419 PB L 74663 — Macroscopic photographs, comparative photographs with the "Busch" surface tester, processing and surface investigation. 1941. In German. 1.50

4420-4438 PB L 74663 — Tests for the production of singly cast material for piston rings for aircraft engines with electrode residuum, lignite tar coke and oil coke as recarburizing agents. 1941. In German. 2.00

4439-4464 PB L 74663 — Brake tests with various Ge-alloys. 1942. In German. 3.00

4465-4471 PB L 74663 — Aircraft engine piston rings of the "Komorauer Eisenwerke". 1942. In German. 1.50

4472-4476 PB L 74663 — Testing standard singly cast material having an addition of silicon carbide. 1942. In German. 1.50

4477-4479 PB L 74663 — Testing of a sintered iron specimen. 1942. In German. 1.50

4480-4492 PB L 74663 — Testing of chrome plated piston rings. 1942. In German. 1.50

4493-4498 PB L 74663 — Report on phosphatized and annealed piston rings. 1940. In German. 1.50

4499-4513 PB L 74663 — Piston ring tests. 1940. In German. 1.50

4514-4527 PB L 74663 — Tensile stength of "Goetze" brake band material at various temperatures as well as the influence of annealing on hardness and wear and tear. 1943. In German. 1.50

4528-4550 PB L 74663 — The development of new piston ring materials. 1940. In German. 2.50

4551-4556 PB L 74663 — Testing of "Segra" aircraft engine rings. 1942. In German. 1.50

4557-4588 PB L 74663 — Testing of various piston rings. 1941. In German. 3.50

4589-4612 PB L 74663 — The development of new piston ring materials. 1940. In German. 2.50

4613-4623 PB L 74663 — Investigation of three gaskets from a Ju 207. 1944. In German. 1.50

4624-4626 PB L 74663 — Testing of a valve seat ring made of special Krupp cast. 1944. In German. 1.50

4627-4632 PB L 74663 — Examining a fire ring manufactured by "Marquardt". 1942. In German. 1.50

4633-4639 PB L 74663 — Investigation of a Junkers antenna cable ring made of ferritic "Ope" material. 1942. In German. 1.50

4640-4643 PB L 74663 — "Junkers" collector ring packings made of various synthetic materials. 1942. In German. 1.50

4644-4649 PB L 74663 — Testing of a "Junkers" fire ring. 1942. In German. 1.50

4650-4656 PB L 74663 — Investigation of "Junkers" bars. 1940. In German. 1.50

4657-4661 PB L 74663 — Visit to the "Junkers Flugzeug und Motorenwerke, Dessau." 1939. In German. 1.50

4662-4690 PB L 74663 — Examination of a "Junkers" piston with piston rings and the pertinent cylinder. 1939. In German. 3.00

PB L 74902. HOESCH A. G., DORTMUND, GERMANY. Production and tests of iron and steels. (FIAT Microfilm Reel T-41, Frames 1-732). 1936-1938. 732 f. Price: Microfilm-$6.00-Enlargement print-$73.50. This reel consists of 91 reports as listed below. The individual reports will be available as enlargement prints only. The entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this reel. In German.

Frames	Title	Price
1-11 PB L 74902	Metallographic investigation of hot and cold rolled hoop iron. Jan 1936. In German.	$1.50
12-19 PB L 74902	Metallurgical tests of transformer strips. Jan 1936. In German.	1.50
20-23 PB L 74902	Experiments on the recovery of vanadium from basic Bessemer pig iron. Mar 1936. In German.	1.50
24-25 PB L 74902	Production of rich vanadium slag by blasting in a converter. Mar 1936. In German.	1.50
26-29 PB L 74902	Production and investigation of 10/10 Cr-Mo steel. Jan 1937. In German.	1.50
30-34 PB L 74902	Investigation of "Katan-elektro-dispers" inhibitor. Mar 1936. In German.	1.50
35-38 PB L 74902	Manufacture and calibration of a pyrometer installation for sheet metals. Mar 1936. In German.	1.50
39 PB L 74902	Effect of gasoline and other fuels on "Cupral" hoop iron. Mar 1936. In German.	1.50
40-41 PB L 74902	Blast furnace - slag analysis. Feb 1936. In German.	1.50
42-73 PB L 74902	Spherical slag inclusions in a KW - ingot. Feb 1936. In German.	3.50
74-75 PB L 74902	Comparative volume spherical slag inclusions in dead and wild steel. Mar 1937. In German.	1.50
76-78 PB L 74902	Vanadium slagging experiments. Feb 1936. In German.	1.50
79-83 PB L 74902	Investigation of steel clutch components as substitutes for bronze parts. Feb 1936. In German.	1.50
84-116 PB L 74902	Investigation of Reichsbohn railroad ties. Jun 1936. In German.	3.50
117-124 PB L 74902	Reduction experiments with Fortuna ore and solid carbon by injecting air at various temperatures. Feb 1936. In German.	1.50
125-137 PB L 74902	Increase in the ammonium citrate solubility of basic slag. Feb 1936. In German.	1.50
138-144 PB L 74902	Examination of two aluminum lacquer-coated "Alumatin" sheet metal plates. Jun 1936. In German.	1.50
145-151 PB L 74902	Appearance of "fish scales" as the result of enameling cold-rolled	

material. May 1936. In German. 1.50

153-162 PB L 74902 — Investigation of strip spring steel for chairs. Jul 1936. In German. 1.50

163-166 PB L 74902 — Recrystallization experiments. May 1936. In German. 1.50

167-194 PB L 74902 — Examination of three "Novar" melts for intercrystalline corrosion. (18/1 Cr-Mo steel). Oct 1938. In German. 3.00

195-210 PB L 74902 — Investigation of ruptured deep-drawn specimens of lead-coated hoop-iron. May 1936. In German. 2.00

211-226 PB L 74902 — Reaction of aluminum, plated, galvanized, tinned, and lead-coated iron to cement. n.d. In German. 2.00

227-259 PB L 74902 — Effect of various alloying elements on the properties of 18/1 Cr-Mo steel, especially its resistance to intercrystalline corrosion. n.d. In German. 3.50

260-262 PB L 74902 — Effect of various alloying elements on the acid resistance of 18/1 Cr-Mo steel. Nov 1937. In German. 1.50

263-268 PB L 74902 — Effect of the type of lubricating oil on carbon separation during annealing. May 1936. In German. 1.50

269-272 PB L 74903 — Investigation of three oil samples for use in tin plating. May 1936. In German. 1.50

273-280 PB L 74902 — Resistance of 20/2 Cr-Al steel to scaling in comparison with Krupp non-scaling steels. Nov 1936. In German. 1.50

281-295 PB L 74902 — Properties of "Enduro" stainless steels (Republic Steel Corp)., Nov 1936. In German. 1.50

296-301 PB L 74902 — Examination of welded 18/1 Cr-Mo sheet steel. Jan 1937. In German. 1.50

302-305 PB L 74902 — Annealing experiments with hardened strip steel. Nov 1936. In German. 1.50

306-309 PB L 74902 — Sharp decline in notched-bar toughness and impact tension stability of K.W. material depending on the rolling method. Nov 1936. In German. 1.50

310-312 PB L 74902 — Aluminum-dipped wire for natural corrosion tests. Mar 1937. In German. 1.50

313-325 PB L 74902 — Examination of hot-rolled hard steel from various charges. 1936. In German. 1.50

326-340 PB L 74902 — Examination of 3, ⌀280 cold-rolls with a short service life, and 1-⌀280 cold-roll with a long service life. Nov 1936. In German. 1.50

341-347 PB L 74902 — Krupp comments on rejected ⌀280 cold rolls from No. 3 plate mill. Jan 1938. In German. 1.50

348-351 PB L 74902 — Investigation of a Schoeller & Bleckmann ⌀280 cold roll from No.3 plate mill. Oct 1937. In German. 1.50

353-357 PB L 74902 — Examination of 140 x 2.0 mm strip steel for use in drawing. Oct 1936. In German. 1.50

358-361 PB L 74902 — Desulfurization of basic soft steel. Nov 1936. In German. 1.50

363-371 PB L 74902 — Examination of two mine-hammer heads. Nov 1936. In German. 1.50

373-380 PB L 74902 — Wear-tests of black heart malleable iron for bushings. Nov 1936. In German. 1.50

381-394 PB L 74902 — Investigation of "Armco" iron. Mar 1937. In German. 1.50

395-407 PB L 74902 — Relation of the degree of cold-rolling to the strength properties of K.W.K. material. Jan 1937. In German. 1.50

408-417 PB L 74902 — O₂ analysis of raw ingots. Mar 1937. In German. 1.50

418-423 PB L 74902 — X-ray tests of phosphate slag. Oct 1936. In German. 1.50

424-430 PB L 74902 — Examination of rejected strip steel for chain side bars. Feb 1937. In German. 1.50

431-436 PB L 74902 — Increase in the ammonium citrate solubility of non-silicated basic slag by a silica addition. Oct 1936. In German. 1.50

437-438 PB L 74902 — Vanadium recovery from acid converter slag by treatment with hydrochloric acid-gas. Oct 1936. In German. 1.50

439-442 PB L 74902 — Investigation of defective aluminum plated hoop iron. Oct 1936. In German. 1.50

443-447 PB L 74902 — Lead corrosion in electrolysis bath cells. n.d. In German. 1.50

448-459 PB L 74902 — Investigation of a 65 mm. hoisting cable from Ficken melt No. 7882. Oct 1936. In German. 1.50

460-465 PB L 74902 — Investigation of 3% Si-steel. Sep 1936. In German. 1.50

466-469 PB L 74902 — Investigation of the dark coloration of newly-galvanized wire cables. Apr 1937. In German. 1.50

470-475 PB L 74902 — Examination of hot-rolled "Novar" sheets. Apr 1937. In German. 1.50

476-484 PB L 74902 — Deep-drawing capacity of cold-rolled and annealed "Novar" sheet metal. Apr 1937. In German. 1.50

485-487 PB L 74902 — Metallography of an Al-alloy specimen. Apr 1937. In German. 1.50

488-498 PB L 74902 — Tin recovery from residues in tinplate manufacture. Mar 1936. In German. 1.50

499-506 PB L 74902 — Effect of the mortar joint on the compression fusing of Cowper bricks. Aug 1936. In German. 1.50

507-512 PB L 74902 — Qualitative analysis of KWK soft steel. Jun 1936. In German. 1.50

513-517 PB L 74902 — Cold notch toughness of St C 35.61 steel. Sep 1936. In German. 1.50

518-531 PB L 74902 — Continuation of frames 507-512. Nov 1936. In German. 1.50

532-536 PB L 74902 — Sharp decrease of impact tension stability in KWK soft steel. Jan 1937. In German. 1.50

537-541 PB L 74902 — Mechanical properties of KW material at temperatures between - 60° and +800°. Aug 1937. In German. 1.50

543-545 PB L 74902 — Required duration for decarburization of "Dynamo" strip in the stripping furnace. Jun 1936. In German. 1.50

546-548 PB L 74902 — Effect of mortar grain size on compression fusion values. Sep 1936. In German. 1.50

549-552 PB L 74902 — Rapid test for 8 rust preventive paints. Sep 1936. In German. 1.50

553-559 PB L 74902 — Examination of KWK mill bars. Sep 1936. In German. 1.50

560-570 PB L 74902 — Investigation of rails from Thomas, electro, and S. M. melts to determine the cause of split rails. Feb 1937. In German. 1.50

571-578 PB L 74902 — Examination of "Novar" sheets of varying welding capacity. n.d. In German. 1.50

579-585 PB L 74902 — Corrosion tests of aluminum-coated sheet metal. Jan 1937. In German. 1.50

585-590 PB L 74902 — Examination of test melts containing 17-21% Cr and 0.7-1.1% Mo. Dec 1937. In German. 1.50

591-597 PB L 74902 — Examination of combustion of rough silica masses by means of a dilatometer. Dec 1936. In German. 1.50

598-604 PB L 74902 — Check of molding-sand test equipment. Jan 1937. In German. 1.50

605-607 PB L 74902 — Acid resistance of cold-rolled and annealed "Novar" sheet. May 1937. In German. 1.50

608-611 PB L 74902 — Effect of cutting on the magnetic properties of sheet metals. Apr 1937. In German. 1.50

612-621 PB L 74902 — Aluminum coatings for iron. Apr 1937. In German. 1.50

622-626 PB L 74902 — Continuation of frames 263-268 May 1937. In German. 1.50

627-630 PB L 74902 — Test of tin plated and partially polished sheet metals. May 1937. In German. 1.50

631-655 PB L 74902 — New methods for steel evaluation. Mar 1937. In German. 2.50

656-671 PB L 74902 — Effect of Cu-content on cupping values. Feb 1937. In German. 2.00

672-675 PB L 74902 — Steel production in a simple electric furnace using the Hoesch Laboratory transformer installation. Dec 1937. In German. 1.50

676-680 PB L 74902 — Notched-bar toughness examination of KWP sheet bars. Feb 1937. In German. 1.50

681-686 PB L 74902 — Process for increasing the heat resisting qualities of Fe-Al and Fe-Al-Cr alloys. May 1937. In German. 1.50

687-698 PB L 74902 — Examination of bar springs of Hoesch and other manufacture. Mar 1937. In German. 1.50

699-705 PB L 74902 — Qualitative analysis of 2% Mn-steel rails. Mar 1937. In German. 1.50

706-711 PB L 74902 — Corrosion tests of hot aluminum coated wire. Aug 1937. In German. 1.50

712-718 PB L 74902 — Metallography of two stainless wire sections. Feb 1937. In German. 1.50

719-720 PB L 74902 — Test of three roller-lubricating oils for carbon separation during box-annealing of sheet metals. Feb 1937. In German. 1.50

721-723 PB L 74902 — Examination of a sheet metal section coated with two types of Al-lacquer. Feb 1937. In German. 1.50

724-726 PB L 74902 — Examination of basic Bessemer pig iron as to its slag purity. Mar 1937. In German. 1.50

727-732 PB L 74902 — Annealing tests with copper plated KWP strips. Feb 1937. In German. 1.50

PB L 74912. HOESCH A. G., DORTMUND, GERMANY. Steel production and tests. (FIAT Microfilm Reel T-43, Frames 1639-2446) 1938-1943. 802 f. Price: Microfilm $6.00 - Enlargement print-$80.50

This reel consists of 106 reports on the production and tests of various steels and steel alloys. The individual reports are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
1639-1643 PB L 74912	"Thermocolors" for temperature measurement. Jun 1940. In German.	$ 1.50
1644-1647 PB L 74912	Examination of Swiss aluminum-plated hoop iron. Apr. 1940. In German.	1.50
1648-1652 PB L 74912	Investigation of the machinability of "Novar" steels with increased Si-content. May 1940. In German.	1.50
1653-1659 PB L 74912	Examination of hot-rolled strip steel manufactured by Hoesch and others for Edge decarburization. Mar. 1940. In German.	1.50
1660-1661 PB L 74912	Mechanical properties of "Novar AIII" sheets manufactured for the Senking firm. Mar. 1940. In German.	1.50
1662-1667 PB L 74912	Continuation of frames 1653-1659. Mar. 1940. In German.	1.50
1668-1688 PB L 74912	Investigation of three new grades of Harkort-Eicken high-speed steels. Mar. 1940. In German.	2.50
1689-1699 PB L 74912	Examination of surface-hardened SM rails with a minimum strength of 80 kg/mm². May 1940. In German.	1.50
1700-1717 PB L 74912	Examination of free-cutting steels from 10 charges. Aug. 1940. In German.	2.00
1718-1719 PB L 74912	Experiments to recarburize preliminary blast iron in a basic Bessemer plant. Feb. 1940. In German.	1.50
1720-1721 PB L 74912	Examination of an 85 mm. aluminum-lined bearing bushing. Dec. 1939. In German.	1.50

1722-1728 PB L 74912 — Examination of two aluminum-plated bearing bushing cups. Jan. 1940. In German. 1.50

1729-1734 PB L 74912 — Comparative tests of 19/1 Cr-Mo steel with additions of Cb+Ta, Ti or Zr. May 1940. In German. 1.50

1735-1739 PB L 74912 — Resistance to corrosion of 13 lacquered test sheets. Jan. 1940. In German. 1.50

1740-1753 PB L 74912 — Comparative efficiency of Bicken and Hones high speed steel. Jan. 1940. In German. 1.50

1754-1773 PB L 74912 — Preliminary test of torsion spring steel. May 1940. In German. 2.00

1774-1776 PB L 74912 — Effect of Zr-content on the hardness and interorystalline corrosion of 19/1 Cr-Mo steel. Jul. 1941. 1.50

1777-1788 PB L 74912 — Examination of 6 electric steel melts produced from powdered Fe-Si for slag content. Aug. 1940. In German. 1.50

1789-1809 PB L 74912 — Examination of 50% cold-rolled and soft-annealed sheet metal for automobile bodies. Jan. 1940. In German. 2.50

1810-1811 PB L 74912 — Continuation of frames 1639-1643. May 1941. In German. 1.50

1812-1836 PB L 74912 — Defects in sheet metal. Mar. 1941. In German. 2.50

1837-1839 PB L 74912 — Frequency factors for unalloyed and alloyed steels. Feb. 1941. 1.50

1840-1849 PB L 74912 — Relationship of brinell hardness to tensile strength. Apr. 1941. In German. 1.50

1850-1854 PB L 74912 — Fractured Cr - Si steel leaf springs from the Volkswagen plant. Mar. 1941. In German. 1.50

1855-1860 PB L 74912 — Attempt to increase the effectiveness of annealing in the Hohenlimburg furnace by raw-tempering the rolled strip. Mar. 1941. In German. 1.50

1861-1865 PB L 74912 — Comparative hot tensile tests of hard drawn and tempered brass condenser tubes. Mar. 1941. In German. 1.50

1866 PB L 74912 — Investigation of an aluminum-plated ribbon section annealed above the reaction temperature. Apr. 1941. In German. 1.50

1867-1883 PB L 74912 — Investigation of the effect of salt acetic acid and tap water on sheet metals with various protective coatings. Mar. 1941. In German. 2.00

1884-1887 PB L 74912 — Examination of magnesite bricks of the Friedrich Wilhelm firm. Mar. 1941. In German. 1.50

1888-1898 PB L 74912 — Literature survey of the alloying effect on sheet metals. Feb. 1941. In German. 1.50

1899-1904 PB L 74912 — Properties of iron molds from the Gustehoffnungshütte. May 1942. In German. 1.50

1905-1908 PB L 74912 — Durability of iron molds with increased scrap content. Mar. 1941. In German. 1.50

1909-1917 PB L 74912 — Annealing tests of cast automotive parts. May 1941. In German. 1.50

1918-1923 PB L 74912 — Investigation of the reaction of soda slag with converter slag. Nov. 1938. In German. 1.50

1924-1928 PB L 74912 — Production of smelting mixtures from limestone and soda. Nov. 1938. In German. 1.50

1929-1937 PB L 74912 — Durability of iron molds with low Si and increased Mn contents. May 1939. In German. 1.50

1938-1944 PB L 74912 — Acid resistance of "Novar" steels. Apr. 1940. In German 1.50

1945-1957 PB L 74912 — Effect of an Ni addition on the mechanical properties and interorystalline corrosion of 19/1 Cr - Mo steel. Dec. 1939. In German. 1.50

1958-1964 PB L 74912 — Investigation of a leaf spring with low impact coefficient tested by Ford. Sep. 1938. In German. 1.50

1965-1977 PB L 74912 — Annealing tests of various cold rolled aircraft steels. Dec. 1938. In German. 1.50

1978-1981 PB L 74912 — Examination of gravel specimens produced by mixing basic and acid Bessemer slag. Oct. 1938. In German. 1.50

1982-1991 PB L 74912 — Properties of E37 welding rod. Dec. 1938. In German. 1.50

1992-1996 PB L 74912 — Tests of "Marchon" safety nuts. Feb. 1939. In German. 1.50

1997-2002 PB L 74912 — Examination of "R.E.X" 200 x 30 mm plate slabs. Mar. 1939. In German. 1.50

2003-2012 PB L 74912 — Effect of the heating temperature on the structural formation of "R.E.X" plate slabs. Mar. 1939. In German. 1.50

2013-2016 PB L 74912 — Non-decomposition of basic slag on a waste dump. Jan. 1939. In German. 1.50

2017-2020 PB L 74912 — Coefficient of expansion of "Novar A" between 0° and 1000°. Sep. 1939. In German. 1.50

2021-2023 PB L 74912 — Examination of iron aluminum plated according to German patent No. 627433. Jul. 1938. In German. 1.50

2024-2030 PB L 74912 — Corrosion resistance of galvanized iron with and without iridising. Dec. 1938. In German. 1.50

2031-2033 PB L 74912 — Relationship between the direction of rolling and the magnetic induction of "Dynamo" strip steel. July 1939. In German. 1.50

2034-2041 PB L 74912 — Effect of an N-addition on the properties of 19% Cr steel and 19/1 Cr - Mo steel. Jan. 1947. In German. 1.50

2042-2044 PB L 74912 — Effect of N - content on the strength and machinability of "Novar" steel. Jun 1940. In German. 1.50

2045-2048 PB L 74912 — Weldability of special reinforcing steel. Jun 1939. In German. 1.50

2049-2059 PB L 74912 — Effect of C and Mn contents in "Novar A" on results of tensile tests of welded specimens. Nov. 1939. In German. 1.50

2060-2068 PB L 74912 — Effect of a Be-addition on the properties of 20/1 Cr - Mo steel. Oct. 1939. In German. 1.50

2069-2074 PB L 74912 — Comparison of electric and SM steels. May 1939. In German. 1.50

2075-2078 PB L 74912 — Necessary Cb - content in 17% stainless Cr steel to prevent intercrystalline corrosion. Nov. 1940. In German. 1.50

2079-2087 PB L 74912 — Investigation of premature wear in blow pipes at the Radbod blast furnace installation. Jul 1940. In German. 1.50

2088-2093 PB L 74912 — Examination of lead-coated drawing dies from the Federstahl A. G. Kassel. Jul 1940. In German. 1.50

2094-2095 PB L 74912 — Soft-soldering with Cd and Cd-alloys. Oct. 1940. In German. 1.50

2096-2099 PB L 74912 — Comparative fatigue bending tests of smooth and grooved spring leaves. Jul 1940. In German. 1.50

2100-2106 PB L 74912 — Examination of fractured torsion springs from Hohenlimburg. Sep. 1940. In German. 1.50

2107-2113 PB L 74912 — Creep strength of BSG and GSM - extra die steels. Jun 1940. In German. 1.50

2114-2121 PB L 74912 — Production of paving bricks. Jun 1940. In German. 1.50

2122-2130 PB L 74912 — Utilization of acid blast furnace slag for road building materials. Jun 1940. In German. 1.50

2131-2133 PB L 74912 — Effect of an N - addition to prevent intercrystalline corrosion of 19/1 Cr - Mo steel on the Cb+Ta, Ti, or Zr contents. Apr. 1941. In German. 1.50

2134-2137 PB L 74912 — Weather stability of galvanized wire rope. Jun 1940. In German. 1.50

2138-2140 PB L 74912 — Investigation of vacuum-refined pure iron. Sep. 1940. In German. 1.50

2141-2149 PB L 74912 — Continuation of frames 1644-1647. May 1940. In German. 1.50

2150-2157 PB L 74912 — Used Hoesch Ea 150 bare electrodes for autogenous welding. Jan. 1940. In German. 1.50

2158-2163 PB L 74912 — Effect of Si and Mn-content on the service life of ingot molds. Jan. 1940. In German 1.50

2164-2166 PB L 74912 — Light metal bearing-bushings for aircraft use. Dec. 1939. In German. 1.50

2167-2174 PB L 74912 — Experiments in the production of aluminum bearings with steel bushings. Aug. 1940. In German. 1.50

2175-2179 PB L 74912 — Examination of roughened and lacquered metallic strips with soldered or welded recessed edges (for food containers). Dec. 1939. In German. 1.50

2180-2184 PB L 74912 — Examination of annealed K. W. sheets 2000 x 1000 x 1.0. Nov. 1939. In German. 1.50

2185-2189 PB L 74912 — Effect of soft annealing on the structural formation and mechanical properties of K. W. sheets. Nov. 1939. In German. 1.50

2190-2198 PB L 74912 — Examination of spring leaves with rounded edges. Nov. 1939. In German. 1.50

2199-2208 PB L 74912 — Creep strength of scale-resistant steels free of nickel. Sep 1940. In German. 1.50

2209-2215 PB L 74912 — Attempts to alloy ingot steel with Pb, Bi, or Ag. Aug. 1940. In German. 1.50

2216-2224 PB L 74912 — Flexibility of "Novar B" after heating to 1300°. Jul 1940. In German. 1.50

2225-2229 PB L 74912 — Examination of surface-hardened rails. Nov. 1939. In German. 1.50

2230-2235 PB L 74912 — Examination of "Tuncan" enameled sheet metal and "Diepstamp" deep drawing sheet metal. Jan. 1940. In German. 1.50

2236-2241 PB L 74912 — Mechanical properties of HA98 240 free cutting steels. Oct. 1939. In German. 1.50

2242-2244 PB L 74912 — Machinability of "Helos" free-cutting steel. Apr. 1940. In German. 1.50

2245-2249 PB L 74912 — Examination of food containers made of "Feran" and tin plate and filled with tap water after storage for 9 years. Oct. 1939. In German. 1.50

2250-2259 PB L 74912 — Comparative notch toughness of ingot crop ends from two charges. Dec. 1939. In German. 1.50

2260-2262 PB L 74912 — Beaded seams in food containers. Nov. 1939. In German. 1.50

2263-2268 PB L 74912 — Examination of food containers made of black sheet and of galvanized strip. Nov. 1939. In German. 1.50

2269-2272 PB L 74912 — Suitability of two hard solders with low Ag-content for "Novar" steels. Dec. 1939. In German. 1.50

2273-2275 PB L 74912 — Analysis of hydrogen content in steel pig, ferromolybdenum, molybdenum metal, and calcium molybdate. Nov. 1939. In German. 1.50

2276-2285 PB L 74912 — Tests of S 49 rails produced under various conditions. Feb. 1941. In German. 1.50

2286-2288 PB L 74912 — Structural examination of rail specimens from two charges. May 1941. In German. 1.50

2289-2304 PB L 74912 — Crack formation in the base surface of S 49 rails. May 1941. In German. 2.00

2305-2320 PB L 74912 — Machinability of "Autax I" free-cutting steel cast in standard and in flask molds. Feb. 1941. In German. 2.00

2321-2322 PB L 74912 — Effect of the degree of fineness of ground basic slag on the citric acid solubility. Dec. 1940. In German. 1.50

2323-2332 PB L 74912 — Sheets from Thomas K W melt 15836 with a 60 kg Al - addition. Dec. 1940. In German. 1.50

2333-2337 PB L 74912 — Solidification capacity of Thomas - KW and SM - KW steel. Feb. 1941. In German. 1.50

2338-2348 PB L 74912 — Effect of low alloying elements on the machinability and properties of soft steel. Dec. 1940. In German. 1.50

2349-2363 PB L 74912 — Investigation of Be - casehardened armor plate. Jan. 1941. In German. 1.50

2364-2367 PB L 74912 — "Pyrometer" alloys of the "Deutsche gold und silber Scheideanstalt." May 1941. In German 1.50

2368-2397 PB L 74912 — Continuation of frames 2286-2288. Nov. 1940. In German. 3.00

2398-2403 PB L 74912 — Tests of aluminum-plated food containers. Feb. 1943. In German. 1.50

2424-2425 PB L 74912	Examination of soft steel ingots for segregation and slag inclusions. Apr. 1942. In German.	2.00
2426-2426 PB L 74912	Examination of Barkort-Ecken sample molds. Feb. 1941. In German.	1.50
2427-2433 PB L 74912	Metallography of an REW stainless ingot. Apr. 1941. In German.	1.50
2434-2440 PB L 74912	Effect of a low As - content on the strength properties of soft steels. Jul 1941. In German.	1.50

PB L 73204. I. G. FARBENINDUSTRIE A. G., FRANKFURT AM MAIN-HOECHST, GERMANY. Acetylene investigations and welding techniques. (FIAT Microfilm Reel CC 50, Frames 1827-2036) 1931-1939. 1031 f. Price: Microfilm-$6.00 - Enlargement Print-$103.50
This reel was prepared by FIAT investigators in Germany. 8 individual items are listed below and will be available as enlargement prints. Each frame number from 1827 through 1833 is assigned to a single book, pamphlet, or manuscript with total number of pages as indicated. Please include PB and frame numbers when ordering individual items.
In German.

Frames	Title	Price
1827 (32 pages) PB L 73204	Testing of the machines and the material for welding set-ups and testing of the x-ray installations for material examination. In German.	$3.50
1828 (152 pages) PB L 73204	Research on calcium carbide, acetylene, oxygen and related fields. In German.	15.50
1829 (271 pages) PB L 73204	Research on calcium carbide, acetylene, oxygen and related fields. In German.	27.50
1830 (272 pages) PB L 73204	Research on calcium carbide, acetylene, oxygen and similar fields. In German.	27.50
1831 (33 pages) PB L 73204	The influence of different kinds of after treatments on the permanent tensile strength of autogenously welded sheets for boilers. In German.	3.50
1832 (28 pages) PB L 73204	Wear-and-tear investigations on hard facing. By W. Sauersmann, Jul 21, 1931. In German.	3.00
1833 (40 pages) PB L 73204	Wear-and-tear experiments on differently annealed hard facings. By O. Mueller, Dec 20, 1935. In German.	4.00
1834-2036 PB L 73204	The autogenous technique. By H. Holler, n. d. In German.	20.50

PB L 73204-S. I. G. FARBENINDUSTRIE A. G., FRANKFURT AM MAIN-HOECHST, GERMANY. Acetylene investigations and welding techniques. (FIAT Microfilm Reel CC 50, Frames 1827-2036, abstract cards) 1931-1939. 11 p. Price: Microfilm-$1.00 - Photostat-$1.00
Brief abstracts of the individual items on the above reel CC 50, PB L 73204, prepared by FIAT personnel in Germany.

PB L 74627. KRUPP, FRIEDRICH, WERKE A.G., ESSEN, GERMANY. Production of manganese slag and ferrochromium. (FIAT Microfilm Reel L 23, Frames 1822-2650) 1935-1943. 829 f. Price: Microfilm-$6.00 - Enlargement print-$83.00.
This reel was prepared by FIAT investigators in Germany. 69 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
1822-1896 PB L 74627	Production of high percentage manganese slag by means of the ore process. By J. Wittig, G. Wens, and E. Wentrup. 1941. In German.	$7.50
1897-1900 PB L 74627	Manganese in the "Siemens-Martin-Stahlwerk". 1941. In German.	1.50
1901-1977 PB L 74627	Converting of phosphorus "Spiegeleisen". 1935-1941. In German.	8.00
1978-1990 PB L 74627	The manganese production from German iron ores containing manganese by means of a chemical process. n.d. In German.	2.50
1991-2014 PB L 74627	Production of manganese for the manufacture of high percentage ferro manganese by converting of "Spiegeleisen". Written by Wentrup. 1943. In German.	2.50
2015-2017 PB L 74627	Preliminary report on converting of "Spiegeleisen" to manganese slag. 1943. In German.	1.50
2018-2031 PB L 74627	Investigation of the procurement of a manganese concentration low in phosphorus. 1943. In German.	1.50
2032-2034 PB L 74627	Converting of "Spiegeleisen" low in P to manganese slag. 1943. In German.	1.50
2035-2038 PB L 74627	Process of removing manganese from pig iron between blast furnace and steel mill. 1943. In German.	1.50
2039-2060 PB L 74627	Converting of "Spiegeleisen" to slag high in manganese and low in phosphorus. 1943. In German.	1.50
2061-2059 PB L 74627	Production of slag high in manganese by means of the ore process in the blast furnace. 1943. In German.	1.50
2060-2063 PB L 74627	Production of 25% - 30% ferro manganese slag low in P by means of acid melting with roasting Spar and "Nikopol" ore in the blast furnace. 1943. In German.	1.50
2064-2065 PB L 74627	Production of slag containing a high percentage of manganese by means of acid melting with roasting "par and "Gevar" ore in the blast furnace. 1944. In German.	1.50
2066-2070 PB L 74627	Manganese distribution depending on the silicon content of the iron and slag composition with a high Mn content. 1944. In German.	1.50
2071-2073 PB L 74627	Dephosphorization of "Spiegeleisen". 1944. In German.	1.50
2074-2083 PB L 74627	Production of slag high in manganese from "Spiegeleisen". By Wittig. 1944. In German.	1.50
2084-2098 PB L 74627	Converting of "Spiegeleisen". 1944. In German.	1.50
2099-2103 PB L 74627	The slag composition after converting of iron containing Cr and Ni. By Wentrup, Ahren, and Winters. 1944. In German.	1.50
2104-2110 PB L 74627	Influence of the slag condition on the development of metallurgical reactions during the converting of pig iron high in Mn particularly of P "Spiegeisen". 1944. In German.	1.50
2111-2134 PB L 74627	Production of slag containing Mn by transforming "Spiegeleisen" and	

roasting spar in the cupola furnace. By Wentrup. 1944. In German. 2.50

2138-2139 PB L 74627 — Raw material for refined Mn. By Wentrup. 1944. In German. 1.50

2140-2160 PB L 74627 — Method of concentrating Mn in iron ores containing Mn. By Helge Löfquist. 1936. In German. 2.50

2161-2188 PB L 74627 — Experiments for the "Löfquist" process. By Wittig. 1936. In German. 3.00

2189-2195 PB L 74627 — Production of iron sulphide in the "Rheinhausen" ferrochromium furnace. By Bansen. 1937. In German. 1.50

2196-2198 PB L 74627 — Direct iron process with roasting spar. 1937. In German. 1.50

2199-2200 PB L 74627 — "Löfquist" method. By Wittig. 1937. In German. 1.50

2201-2208 PB L 74627 — Experiment with regard to the "Löfquist" process. By Wittig. 1937. In German. 1.50

2209-2212 PB L 74627 — Direct ore process of "Spiegeleisen" with an addition of iron sulphide. By Wittig. n.d. In German. 1.50

2213-2214 PB L 74627 — Phosphorus in the "Löfquist" method. 1937. In German. 1.50

2215-2216 PB L 74627 — Reduction of MnO, MnS slag. By Wentrup. 1937. In German. 1.50

2217-2225 PB L 74627 — Test report concerned with the "Löfquist" process. By Wittig. 1937. In German. 1.50

2226-2228 PB L 74627 — Use of "Mackener" pyrite. 1937. In German. 1.50

2229-2233 PB L 74627 — The visit to "Rheinhausen". By the "Verein deutscher Eisenhüttenleute". 1937. In German. 1.50

2234-2252 PB L 74627 — Reactions between iron manganese melts containing carbon and iron oxide and iron sulphide at 1300-1400° C. By W. Oelsen. n.d. In German. 2.00

2253-2349 PB L 74627 — Tests concerned with the "Löfquist" process. 1937-1938. In German. 10.00

2350-2357 PB L 74627 — Producing slag containing Mn. 1938. In German. 1.50

2358-2368 PB L 74627 — Manganese slag containing phosphorus. 1938. In German. 1.50

2369-2373 PB L 74627 — Treating roasting spar in the direct process. 1937. In German. 1.50

2374-2380 PB L 74627 — Processing German ores containing Mn from "Spiegeleisen" to ferro manganese. By Wittig. 1937. In German. 1.50

2381-2388 PB L 74627 — Heat balance for converting of "Spiegeleisen". 1937. In German. 1.50

2389-2390 PB L 74627 — Removing Mn from roasting spar. By Wittig. 1937. In German. 1.50

2391-2392 PB L 74627 — Refining of pig iron with liquid ores. 1938. In German. 1.50

2393-2409 PB L 74627 — Conservation of manganese. By Hermann Schenck. 1936. In German. 2.00

2410-2415 PB L 74627 — The production of pig iron and highly valent ferro manganese. 1935. In German. 1.50

2416-2418 PB L 74627 — The "Rennerfelt Kelling" method. By Wentrup. 1937. In German. 1.50

2419-2422 PB L 74627 — Wrought iron from decarburized granulated metal. By Wentrup. 1940. In German. 1.50

2423-2436 PB L 74627 — The "Rennerfelt Kelling" testing installation. 1942-1943. In German. 1.50

2437-2443 PB L 74627 — Tests with "Rennerfelt Kelling" "Spiegeleisen". By Heischkeil. 1943. In German. 1.50

2444-2447 PB L 74627 — The "Rennerfelt Kelling" testing installation. By Wentrup. 1943. In German. 1.50

2448-2463 PB L 74627 — Decarburization of "Spiegeleisen" and ferro manganese. 1943. In German. 2.00

2464-2469 PB L 74627 — Production of pig iron and highly valent ferro manganese from "Dr. Geyer" ore. By Steffe. 1935. In German. 2.00

2470-2480 PB L 74627 — Granulation of "Spiegeleisen" (4% C, 11% Mn). 1944. In German. 1.50

2481-2492 PB L 74627 — Converting of hematite containing Cr. 1936. In German. 1.50

2493-2494 PB L 74627 — Production of nitrogen-ferrochromium. By Knappert. 1936. In German. 1.50

2495-2508 PB L 74627 — Converting of hematite containing Cr. second test. 1936. In German. 1.50

2509-2516 PB L 74627 — Behavior of chromium during converting of pig iron. 1937. In German. 1.50

2517-2525 PB L 74627 — Melting points of acid ferrous oxide-chromous oxide slag. By Wentrup. 1938. In German. 1.50

2526-2528 PB L 74627 — Converting of nickel pig iron. 1938. In German. 1.50

2529-2532 PB L 74627 — Decarburizing chromium alloys. 1938. In German. 1.50

2533-2539 PB L 74627 — Decarburization of iron-chromium alloys. By Wentrup. 1939. In German. 1.50

2540-2548 PB L 74627 — Transformation of chromium with sulfur in iron melts. By Wentrup. 1939. In German. 1.50

2549-2554 PB L 74627 — Nitrogen solubility of chromium and chromium alloys depending on the temperature. 1939. In German. 1.50

2555-2558 PB L 74627 — Decarburization of iron-chromium alloys. 1939. In German. 1.50

2559-2575 PB L 74627 — Chromium during converting of Ni pig iron. 1939. In German. 2.00

2576-2592 PB L 74627 — Ferrochromium. 1940. In German. 2.00

2593-2595 PB L 74627 — Converting of ferrochromium containing carbon. By Bansen. 1940. In German. 1.50

2596-2606 PB L 74627 — Production of ferrochromium containing N2 for melting "V2A" containing N_2. 1940. In German. 1.50

2607-2640 PB L 74627 — These frames are illegible.

2641-2650 PB L 74627 — Decarburization of ferrochromium by Converting. Reported by Wentrup. 1940. In German. — 1.50

PB L 74651. KRUPP, FRIEDRICH, WERKE, ESSEN, GERMANY. Reports on metallurgical processes. (FIAT Microfilm Reel L 24, Frames 2651-3505) 1935-1944. 855 f. Price: Microfilm-$6.00 - Enlargement print-$86.00. This reel was prepared by FIAT investigators in Germany. 75 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
2651-2663 PB L 74651	Decarburization of ferrochromium by converting. Reported by Wentrup, 1940. In German. Continued from reel No L 23, PB 74627.	$ 1.50
2664-2667 PB L 74651	Converting of Cr-Ni-iron. 1940. In German.	1.50
2668-2692 PB L 74651	Production of slag rich in chromium during converting of pig iron containing chromium. n.d. In German.	2.50
2693-2704 PB L 74651	Partial reduction of calcium ferrite slag containing chromium and phosphorus from the "Norddeutsche Hütte." By Wentrup. 1941. In German.	1.50
2705-2724 PB L 74651	Additional investigations to tests for the production of slag rich in chromium during the converting of pig iron containing chromium. 1941. In German.	2.00
2725-2729 PB L 74651	Influence of temperature on the C and Cr burning process. 1941. In German.	1.50
2730-2782 PB L 74651	Tests concerned with the production of slag containing chromium during the converting of pig iron containing chromium. 1941. In German.	5.50
2783-2797 PB L 74651	Reduction of iron ores containing chromium with particular consideration of some Greek ores by G. Gussoni and A. Bargone. 1941. In German.	1.50
2798-2831 PB L 74651	Production of slag rich in chromium from pig iron containing chromium. 1942. In German.	3.50
2832-2835 PB L 74651	Producing chromium from basic "S-M" slags. By Wentrup. 1942. In German.	1.50
2836-2840 PB L 74651	Nitrogen absorption of ferro chromium. By Edelmann, 1942, 1943. In German.	1.50
2841-2859 PB L 74651	Production of chromium from iron ores containing chromium by converting of pig iron containing chromium. n. d. In German.	2.00
2960-2966 PB L 74651	Reduction tests with chromium ore. 1943. In German.	1.50
2967-2973 PB L 74651	Tests for the production of ferro chromium containing nitrogen. 1944. In German.	1.50
2974-2981 PB L 74651	Refining tests for producing slag rich in vanadium. 1935. In German.	1.50
2982-2987 PB L 74651	Tests concerned with the production of vanadium from "Thomas" pig iron. 1936. In German.	1.50
2988-2990 PB L 74651	Tests for the increase of vanadium due to soda slag resulting from desulfurizing. 1936. In German.	1.50
2991-3016 PB L 74651	The vanadium content of the dust in the "Thomaswerk". 1936. In German.	3.00
3017 PB L 74651	This frame is missing.	
3018-3024 PB L 74651	Bibliography concerned with vanadium production from iron ores. 1937. In German.	1.50
3025-3032 PB L 74651	Vanadium production from dust. Reduction tests. By Wentrup. 1937. In German.	1.50
3033 PB L 74651	Vanadium in the desulfurization of pig iron. By Wentrup. 1937. In German.	1.50
3034-3043 PB L 74651	Converting tests for the production of vanadium. 1937. In German.	1.50
3044-3050 PB L 74651	Visit to the "Thomaswerke" and "Thyssenhütte" concerning vanadium. 1937. In German.	1.50
3051-3054 PB L 74651	Cr at the acid converting of V. Behavior of SiO_2 converter lining during the converting of V. 1937. In German.	1.50
3055-3060 PB L 74651	Mn in the converting of V-pig iron. 1937. In German.	1.50
3061-3064 PB L 74651	Method of producing V from slags containing V of the "Mansfelder Kupferschieferbaugesellschaft, Eisleben." By Banser. 1937. In German.	1.50
3065-3085 PB L 74651	Converting tests for the production of vanadium. By Wentrup. 1938. In German.	2.50
3086-3090 PB L 74651	Further tests for the production of vanadium. By Wentrup. 1938. In German.	1.50
3091-3095 PB L 74651	Converting tests with pig iron containing V. By Wentrup. 1938. In German.	1.50
3096-3100 PB L 74651	Separation of Mn from V-pig iron. 1938. In German.	1.50
3101-3103 PB L 74651	Investigation of briquettes (V.A. No 9693 and 9694). 1938. In German.	1.50
3104-3110 PB L 74651	Separation of Mn from V-pig iron. 1938. In German.	1.50
3111-3115 PB L 74651	Melting of FeS_2 into Fe briquettes. 1938. In German.	1.50
3116-3118 PB L 74651	Mn separation from V-pig iron. 1938. In German.	1.50
3119-3130 PB L 74651	Converting of V-pig iron low in Mn. 1936. In German.	1.50
3131-3135 PB L 74651	Application of vanadic acid instead of ferro vanadium in the basic arc furnace. 1938. In German.	1.50
3136-3141 PB L 74651	Melting of FeS_2 in the shaft furnace. By Wittig. 1938. In German.	1.50

3142-3151 PB L 74651	Structure and magnetic properties of slag containing V. By Wentrup. 1938. In German.	1.50
3152-3154 PB L 74651	Refining pig iron with liquid ore. By Wittig. 1938. In German.	1.50
3155-3164 PB L 74651	Production of V. 1938. In German.	1.50
3165-3179 PB L 74651	Converting of V. 1938. In German.	1.50
3180-3181 PB L 74651	Converting of V-pig iron in the converter. By Wittig. 1938. In German.	1.50
3182-3197 PB L 74651	Reduction of V from vanadic acid into a solid state. 1938. In German.	2.00
3198-3208 PB L 74651	Production of ferro vanadium. 1938. In German.	1.50
3209-3225 PB L 74651	Present state of the V production in the "Krupp Konzern." 1939. In German.	2.00
3226-3233 PB L 74651	Raw materials for the production of V-pig iron. By Wentrup. n. d. In German.	1.50
3234-3252 PB L 74651	The separation of Mn from V-pig iron in the blast furnace. 1939. In German.	2.00
3253-3265 PB L 74651	Production of ferro vanadium. By Wentrup. 1939. In German.	1.50
3266-3291 PB L 74651	Converting of V at the "Norddeutsche Hütte." 1939. In German.	3.00
3293-3315 PB L 74651	Production of V slag at the "Norddeutsche Hütte." By Wentrup. 1939. In German.	2.50
3316-3318 PB L 74651	Converting of V. 1939. In German.	1.50
3319-3322 PB L 74651	Reduction of ferro vanadium. 1939. In German.	1.50
3323-3331 PB L 74651	Reduction of vanadic acid by Si. By Wentrup. 1939. In German.	1.50
3332-3345 PB L 74651	The V content in blast furnace slag during the production of V-pig iron. 1939. In German.	1.50
3346-3358 PB L 74651	Reduction of vanadic acid by means of Si. Reported by Wentrup. 1939. In German.	1.50
3359-3370 PB L 74651	Production of Fe-vanadium from vanadic acid. n. d. In German.	1.50
3371-3376 PB L 74651	Formation of hydrogen phosphide by the production of V-pig iron. By Wentrup. 1941. In German.	1.50
3377-3387 PB L 74651	Tests for producing alkali vanadium slag by transforming pig iron containing vanadium with sodium sulfate in the converter. By Maetz. 1941. In German.	1.50
3388-3390 PB L 74651	Processes in the leaching plant. 1937. In German.	1.50
3391-3400 PB L 74651	Production of vanadic acid from concentrated vanadium slag. 1938. In German.	1.50
3401-3410 PB L 74651	Tests for producing vanadic acid from concentrated V-slag. 1939. In German.	1.50
3411-3420 PB L 74651	Production of vanadic acid from concentrated V-slag. 1939. In German.	1.50
3421-3422 PB L 74651	Roasting tests with V slag. 1939. In German.	1.50
3423-3426 PB L 74651	Visit to the vanadium plant in "Witkowitz." 1939. In German.	1.50
3427-3432 PB L 74651	Sintering tests with V-slag. 1939. In German.	1.50
3433-3436 PB L 74651	Investigating the solubility of vanadic acid. 1939. In German.	1.50
3437-3445 PB L 74651	Ferro vanadium. 1939. In German.	1.50
3446-3447 PB L 74651	The water content of vanadic acid. By Wentrup. 1939. In German.	1.50
3448-3468 PB L 74651	Operational tests in the vanadium plant of the "Norddeutsche Hütte, Bremen-Oslebshausen." 1940. In German.	2.50
3469-3475 PB L 74651	Experiences and tests of the vanadium roasting process. 1940. In German.	1.50
3476-3485 PB L 74651	Production of vanadic acid from concentrated V-slag. 1940. In German.	1.50
3486-3497 PB L 74651	Sintering and leaching of V-slag. 1940. In German.	1.50
3498-3500 PB L 74651	Melting of vanadic acid. By Wentrup. 1940. In German.	1.50
3501-3505 PB L 74651	Evaporation of vanadic acid. By Wentrup. 1941. In German.	1.50

PB 74643. KRUPP, FRIEDRICH, WERKE, ESSEN, GERMANY. Research reports on steel production, heat treatment and tests. (FIAT Microfilm Reel L 64, Frames 6192-7100) 1938-1946. 960 f. Price: Microfilm $6.00-Enlargement print-$86.00.
This reel consists of 55 reports as listed below. The individual reports will be available as enlargement prints only, the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this reel. In German.

Frames	Title	Price
6192-6205 PB L 74643	Effect of annealing time on the efficiency of high speed steels. Dec 1939. In German.	$1.50
6206-6209 PB L 74643	Frames cancelled.	
6210-6243 PB L 74643	Aircraft engine crankshafts with welded counterweights. May 1943. In German.	3.50
6244-6254 PB L 74643	Welding tests with chill rolled V2AN. Nov 1939. In German.	1.50
6255-6265 PB L 74643	Forging tests with V2AED in obtain a yield limit greater than 50 Kg/mm^2. Jan 1942. In German.	1.50
6266-6299 PB L 74643	Frames missing.	
6300-6351 PB L 74643	Gradual hardening of Höchling-Buderus OCE steels. Jul 1941. In German.	5.50
6352-6355 PB L 74643	Test of the efficiency of P627 high speed steel with a high chromium content (10.1%). Jan 1942. In German.	1.50
6356-6366 PB L 74643	These frame numbers are cancelled.	
6367-6371 PB L 74643	Comparative tests of wire wound and forged high pressure spheres. Jul 1939. In German.	1.50

6372-6394 PB L 74643 — Results of tests on the effect of local tension-free annealing. Jan 1938. In German. 2.50

6395-6405 PB L 74643 — Mechanical properties of a JUMO-211F crankshaft. Apr 1941. In German. 1.50

6406-6441 PB L 74643 — Specifications for rolling steel and non-ferrous alloys. 1942. In German. 4.00

6442-6447 PB L 74643 — Forging, and heat treatment of a roll-jacket made of 2¾ chrome steel (rolling mills). Feb 1946. In German. 1.50

6448-6450 PB L 74643 — Experiments with Maybach valve springs. Feb 1940. In German. 1.50

6451-6456 PB L 74643 — Corrosion tests of various acid-resistant steels. Mar 1942. In German. 1.50

6457-6476 PB L 74643 — Elliza welding process for locomotive boilers. Jun 1944. In German. 2.00

6477-6485 PB L 74643 — Effect of an increased Si-content in 42 MV 7 steel. Apr 1944. In German. 1.50

6486-6499 PB L 74643 — Effect of short annealing periods at increased temperatures on the toughness properties of structural steels. May 1944. In German. 1.50

6500-6519 PB L 74643 — Columbium-bearing chromium structural steels. May 1944. In German. 2.00

6520-6527 PB L 74643 — Effect of final forging temperature on notched-bar toughness. Apr 1942. In German. 1.50

6528-6566 PB L 74643 — Ti-bearing heat-treated steels. Oct 1941. In German. 4.00

6567-6573 PB L 74643 — Tensile and notched-bar tests of forged and of rolled railroad axles of EA 60 and of basic steel. Sep 1942. In German. 1.50

6574-6612 PB L 74643 — Effect of heat treatment on the mechanical properties of vanadium-bearing heat-treated steels. Dec 1943. In German. 4.00

6613-6614 PB L 74643 — Aircraft fittings of molybdenum-free or low-molybdenum steel castings. Jul 1940. In German. 1.50

6615-6620 PB L 74643 — Steel castings for aircraft purposes. Jul 1940. In German. 1.50

6621-6632 PB L 74643 — Continuation of frames 6613-6614. May 1940. In German. 1.50

6633-6634 PB L 74643 — Investigation of FM 17 aircraft steel. Oct 1941. In German. 1.50

6635-6636 PB L 74643 — Tests of aircraft cast steels. Oct 1941. 1.50

6637-6651 PB L 74643 — Investigation of molybdenum-free cast steel as a substitute for chromium-molybdenum aircraft cast steels. Jul 1941. In German. 1.50

6652-6690 PB L 74643 — Notched-bar toughness of cast steel at low temperatures. Jul 1941. In German. 4.00

6691-6711 PB L 74643 — Weldability of three molybdenum-free cast alloy steels in comparison with 1811 cast chrome steel. Sep 1941. In German. 2.50

6712-6721 PB L 74643 — Determination of mechanical properties notched-bar toughness at + 20° and - 50° and dilatometer curve of test bars. Jul 1941. In German. 1.50

6722-6750 PB L 74643 — Experiments on the development of molybdenum-free aircraft steel castings. Jul 1941. In German. 3.00

6751-6753 PB L 74643 — Use of vanadium alloy steels for heavy duty pipes in boiler construction. Mar 1941. In German. 1.50

6754-6765 PB L 74643 — Effect of silicon on the creep strength and scale formation of superheated steam pipes. Mar 1940. In German. 1.50

6766-6770 PB L 74643 — Krupp. proposal for specifications for unalloyed boiler steel. Jan 1940. In German. 1.50

6771-6797 PB L 74643 — Fatigue bending strength of test shafts of nitrided FPK 13 steel with superimposed hubs. Jul 1940. In German. 3.00

6798-6804 PB L 74643 — Experiments with chromium-free heat resistant steels. n.d. In German. 1.50

6805-6811 PB L 74643 — Properties of P 265 and of chromic iron-aluminum alloys. Jul 1939. In German. 1.50

6812-6816 PB L 74643 — Multi-layer pressure vessels. (for 700 atm.). Dec 1939. In German. 1.50

6817-6819 PB L 74643 — Production of a small welded and wire-wound multi-layer test boiler. May 1938. In German. 1.50

6820-6821 PB L 74643 — Multi-layer pressure spheres. May 1938. In German. 1.50

6823-6824 PB L 74643 — Nitriding tests with WA 342, WA402, WA402E, and WA462. Jul 1941. In German. 1.50

6825-6853 PB L 74643 — Tensile tests of FPE230 bars. Aug 1939. In German. 3.00

6854-6862 PB L 74643 — Effect of nitriding on notched-bar toughness and hardness of EFK964. crankshafts. Jul 1940. In German. 1.50

6863-6879 PB L 74643 — Tests of crankshaft sections of FLW 1460 and 1470. Jan 1942. In German. 3.00

6880-6928 PB L 74643 — Alternate bending strength of longitudinal and cross sections of VUMO211 crankshafts. Oct 1939. In German. 5.00

6929-6932 PB L 74643 — Temper tests of D22S and EFK964. Feb 1938. In German. 1.50

6933-6959 PB L 74643 — Mechanical propeties of nickeliferous high-priority steel. Mar 1942. In German. 3.00

6960-6963 PB L 74643 — Effect of the hardening temperature on the mechanical properties of Cr-Ni-Mo steels. Jul 1939. In German. 1.50

6964-7001 PB L 74643 — Shore hardness test. Sep 1937. In German. 4.00

7002-7008 PB L 74643 — Investigation of test alloys to determine their suitability for Pilger mills. May 1938. In German. 1.50

7709-7024 PB L 74643 — Substitute steels for boiler construction. Jun 1943. In German. 2.00

7025-7074 PB L 74643 — Evaluation of tensile and notch tests (turbine disks of A7M and A8M Mn steels). Feb 1944. In German. 5.00

7075-7082 PB L 74643 — Tensile tests of ingot tumblers. Feb 1941. In German. 1.50

7083-7092 PB L 74643 — Tensile and notch tests of propeller shafts. May 1944. In German. 1.50

7093-7100 PB L 74643 — Tensile tests of A70 bars. Mar 1939. In German. 1.50

PB L 80819. PLATAU, LILLIAN C. Evaluation of wire WD-11/TT with weatherproofed cotton braid and various synthetic braids. (Sig Corps Eng Lab Tech Memo M-1060). Apr 1947. 26 p. Price: Microfilm-$1.00 - Photostat-$2.00
Tests were made on seven samples of wire to determine the properties of subject constructions under the following conditions: as received, at low and high temperatures, and after exposure to various aging and weathering conditions. These tests are described in detail in this report and results are presented in tabulated form. Four photographs are included.

* PB L 81616. TAYLOR, N. A. Investigation of German needle industry. (BIOS Final Rept 1456, Item 36). Oct 1946. 33 p. Price: Microfilm-$1.75 - Photostat-$4.00
This document contains sixteen reports, eight of which cover sewing machine needle manufacturers, four hand sewing needle manufacturers, one a knitting pin and crochet hook manufacturer and three machine builders for the trade. The reports cover inspection of the various plants, machinery, production volume and facilities. In addition there is a report on a visit to a Dr. Goerres who furnished data on total German production with percentage of export sales and home consumption.

METEOROLOGY AND CLIMATOLOGY

PB L 82100. U.S. OCCUPATION FORCES IN GERMANY. WEATHER SERVICES, BAD KISSINGEN, GERMANY. Climatological and meteorological reports. (FIAT Microfilm Reel Y 60, Frames 5665-6150) 1939-1943. 485 f. Price: Microfilm-$7.00 - Enlargement Print-$50.00
This reel was prepared by FIAT investigators in Germany. 16 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased in microfilm form for $7.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
5665-5687 PB L 82100	Caucasia. By "Der Leitende Heeres-meteorologe im OKH." May 1942. In German.	$4.00
5688-5721 PB L 82100	The flying weather in the Barents sea region. By "Reichsamt für Wetterdienst." 1943. In German.	5.00
5722-5735 PB L 82100	The climatic conditions in Turkey. By "Der Leitende Heeresmeteorloge im OKH." May 1942. In German.	3.00
5736-5766 PB L 82100	Climatic survey in Egypt and Nubia. By "Der Leitende Heeresmeteorologe im OKH." Sept. 1942. In German.	5.00
5767-5776 PB L 82100	The winter rain in Eastern Lybia and Lower Egypt. By Bullig. Oct 1942. In German. Published by "Wetterwarte beim OB Süd."	2.00
5777-5817 PB L 82100	Meeting of the scientific senate for the "Reichswetterdienst" from Mar 30/31, 1942. In German.	6.00
5818-5882 PB L 82100	Activity report of the "Reichsamt für Wetterdienst" for 1938. 1939. In German.	8.00

The ten main types of weather conditions over Central Europe in connection with weather conditions in the Channal by "Oberkommando der Kriegsmarine, edited by "Chef des Wetterdienstes."

5883-5918 PB L 82100	January and February. 1941. In German.	5.00
5919-5953 PB L 82100	March and April. 1942. In German.	5.00
5954-5975 PB L 82100	Appendix for March and April. 1942. In German.	4.00
5976-6010 PB L 82100	May and June. 1941. In German.	5.00
6011-6045 PB L 82100	July and August. 1941. In German.	5.00
6046-6103 PB L 82100	September and October. 1941. In German.	7.00

Experience reports of the "Marinewetterdienst," By "Oberkommando der Kriegsmarine." Editor: "Marineobservatorium Wilhelmshafen."

6104-6116 PB L 82100	Series A, copy 1. 1941. In German.	3.00
6117-6129 PB L 82100	Series A, copy 2. 1941. In German.	3.00
6130-6150 PB L 82100	Series B, copy 1. 1943. In German.	4.00

PB L 74818. U. S. OCCUPATION FORCES IN GERMANY, WEATHER SERVICE, BAD KISSINGEN, GERMANY. Climatological publications. (FIAT Microfilm Reel O 299, Frames 7133-8200) 1938-1940. 1067 f. Price: Microfilm-$6.00 - Enlargement print-$107.00.
This reel was prepared by FIAT investigators in Germany. Individual items are listed below and will be available as enlargement prints. The entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
7133-7357 PB L 74818	Aeronautical climatology: South East. By "Reichsamt für Wetterdienst, Berlin." 1938. In German.	$22.50
7358-7644 PB L 74818	Aeronautical climatology: West (France). By "Reichsamt für Wetterdienst, Berlin." 1939. In German.	29.00
7645-7965 PB L 74818	Aeronautical climatology: West (Great Britain). By "Reichsamt für Wetterdienst" and "Zentrale Wetterdienstgruppe, Berlin," 1939, together with a supplement: "The hydrographic and meteorological conditions within the range of the channel coast." By "Reichsamt für Wetterdienst, Berlin." 1940. In German.	32.50
7966-8200 PB L 74818	Aeronautical climatology: East (Poland). By "Reichsamt für Wetterdienst, Berlin." 1939. In German.	23.50

PB L 82096. U. S. OCCUPATION FORCES IN GERMANY, WEATHER SERVICE, BAD KISSINGEN, GERMANY. Meteorological pocket manual. (FIAT Microfilm Reel Y 20, Frames 1-840) 1931-1939. 840 f. Price: Microfilm-$7.00 - Enlargement print-$85.00.
This reel, prepared by FIAT investigators in Germany, consists of five editions of the above-mentioned booklet dated from 1931 up to 1939, edited by F. Linke and published by "Akademische Verlagsgesellschaft m.b.H., Leipzig." Individual

items in each manual are listed below and will be available as enlargement prints. The entire reel may be purchased in microfilm form for $7.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
	First Edition - 1931	
1-8 PB L 82096	Introduction, table of contents, and errata. In German.	$ 2.00
9-15 PB L 82096	Meteorological history, tables. By C. Kassner. In German.	2.00
15-19 PB L 82096	Meteorological institutes. By F. Linke. In German.	2.00
20-21 PB L 82096	Most important meteorological periodicals. By F. Linke. In German.	2.00
22-28 PB L 82096	List of radio stations, regularly transmitting weather telegrams. By K.Keil. In German.	2.00
28-46 PB L 82096	Decoding key for weather telegrams. By K. Keil. In German.	3.00
46-65 PB L 82096	Basis of theoretical meteorology. By G. Stüve. In German.	3.00
65-112 PB L 82096	Meteorological instruments and observation methods. By E. Kleinschmidt. In German.	6.00
113-135 PB L 82096	Monthly and yearly averages for air pressure, temperature and precipitation. By K. Knoch. In German.	4.00
135-165 PB L 82096	Constants and tables. By F. Linke. In German.	4.00
165-171 PB L 82096	Subject heading list and advertisement for technical literature and instruments. In German.	2.00
	Second Edition - 1933	
172-178 PB L 82096	Introduction and table of contents. In German.	2.00
179-186 PB L 82096	Meteorological institutes (continuation). In German.	2.00
187-188 PB L 82096	List of radio stations, regularly transmitting weather telegrams (continuation). By K. Keil. In German.	2.00
188-189 PB L 82096	Decoding key for weather telegrams (continuation). By K. Keil. In German.	2.00
189-201 PB L 82096	Basis, units, and formulas for atmospheric radiation research. By F. Albrecht. In German.	3.00
202-233 PB L 82096	Apparatus and measuring methods of atmospheric radiation research. By F. Albrecht. In German.	5.00
234-266 PB L 82096	Atmospheric electricity; basis and measuring methods. By H. Israël, Leiden. In German.	5.00
267-283 PB L 82096	Investigating aerological measurements. By G. Stüve. In German.	3.00
284-311 PB L 82096	Calculatory and mathematic-statistical methods of the meteorologist. By Frans Baur. In German.	4.00
312-320 PB L 82096	Meteorological dictionary. By C. Kassner. In German.	2.00
320-345 PB L 82096	Constants and tables (continuation). In German.	4.00
345-352 PB L 82096	Subject heading list, corrections and advertisement for instruments and technical literature. In German.	2.00
	Third Edition - 1939	
353-359 PB L 82096	Introduction and table of contents. In German.	2.00
359-368 PB L 82096	Meteorological history tables. By C. Kassner. In German.	2.00
368-376 PB L 82096	International meteorological organizations. In German.	2.00
376-386 PB L 82096	Some important international agreements. In German.	3.00
386-406 PB L 82096	Radio weather reports. By K. Keil. In German.	3.00
406-427 PB L 82096	Monthly and yearly averages of temperature and precipitation in Northwest and Central Europe. By K. Knoch. In German.	4.00
428-489 PB L 82096	Meteorological dictionary in six languages. By Tor Bergeron. In German.	8.00
490-496 PB L 82096	Appendix and corrections. In German.	2.00
	Fourth Edition - 1939	
497-504 PB L 82096	Corrections, introduction and table of contents. In German.	2.00
505-506 PB L 82096	Meteorological formula symbols. In German.	2.00
506-516 PB L 82096	Mathematical formula collection for the meteorologist. By H. Philippe. In German.	3.00
517-521 PB L 82096	Symbols and formulas for vector calculations. By F. Baur. In German.	2.00
521-553 PB L 82096	Calculatory and mathematic-statistical methods of the meteorologist. By F. Baur. In German.	5.00
554-653 PB L 82096	Constants and tables. In German.	11.00
	Fifth Edition - 1939	
654-660 PB L 82096	Introduction and table of data. In German.	2.00
661-677 PB L 82096	The theoretical basis of dynamic meteorology. By H. Ertel. In German.	3.00
678-723 PB L 82096	Meteorological instruments and observation methods. By E. Kleinschmidt. In German.	6.00
724-732 PB L 82096	Wireless aerological measuring methods. By G. Loeser. In German.	2.00
732-749 PB L 82096	Investigating aerological measurements. By G. Stüve and K. Schneider-Carius. In German.	3.00
749-762 PB L 82096	Basis, units and formulas of atmospheric radiation research. By F. Linke. In German.	3.00
763-797 PB L 82096	Instruments and measuring methods at atmospheric radiation research. By F. Albrecht. In German.	5.00
798-836 PB L 82096	Atmospheric electricity, basis and measuring methods. By H. Israël. In German.	5.00

837-840 PB L 82096	Subject heading list, corrections, and advertisement for technical literature. In German	2.00

PB L 82080. U.S. OCCUPATION FORCES IN GERMANY. WEATHER SERVICE, BAD KISSINGEN, GERMANY. Meteorological publications. (FIAT Microfilm Reel Y 38, Frames 2085-2822) 1937-1943. 738 f. Price: Microfilm-$7.00 - Enlargement Print-$75.00
This reel was prepared by FIAT investigators in Germany. Individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $7.00. Please include PB and frame numbers when ordering individual items. In German except where another language is indicated.

Frames	Title	Price
2085-2228 PB L 82080	Organisms and environment. 1939. In German. Edited by R. Otto with the aid of K. Felix and F. Linke and published by Theodor Steinkopff, Dresden and Berlin.	$16.00

"Mitteilungen der deutschen Akademie der Luftfahrtforschung" (periodical), number 4, 1942.

2229-2239 PB L 82080	The creep property of some Al alloys at high temperature. By F. Bollenrath and Hans Gräber. In German.	3.00
2240-2249 PB L 82080	Recent investigations on the creep properties of some heat resistant iron materials at high temperatures. By Heinrich Cornelius. In German.	2.00
2249-2254 PB L 82080	Discussions concerned with above mentioned reports. In German.	2.00
2255-2373 PB L 82080	Electric measuring devices. By R. Langbein and G. Merkmeister. This is part of a publication, "Technisch-physikalische monographien." 1943. In German. Edited by Rudolf Sewig and published by "Akademische Verlagsgesellschaft Becker & Erler, Kom. Ges., Leipzig."	13.00
2374-2513 PB L 82080	Glacier science. By Erich Drygalski and Fritz Machatschek. Part of the "Enzyklopädie der Erdkunde." 1942. In German. Published by Franz Deuticke, Vienna.	15.00
2514-2695 PB L 82080	Bibliography of meteorological literature. Prepared by "Royal Meteorological Society" with the collaboration of the "Meteorological Office." Vol. IV, No. 1-2/1936, 3-4/1937, 5-6/1938. In English. Edited by the Royal Meteorological Society, London.	20.00
2696-2822 PB L 82080	Hydrological bibliography for 1936/1937 - Germany. By "Deutsche Vereinigung für Geodasie und Geophysik," Berlin. 1938. In German.	14.00

PB L 82150. U. S. OCCUPATION FORCES IN GERMANY. WEATHER SERVICE, BAD KISSINGEN, GERMANY. Meteorological publications. (FIAT Microfilm Reel Y-45, Frames-7124-7834) 1930-1941. 711 f. Price: Microfilm-$7.00 - Enlargement print-$75.00.
This reel was prepard by FIAT investigators in Germany. 9 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $7.00. Please include PB and frame numbers when ordering individual items. In German and Italian.

Frames	Title	Price
7124-7166 PB L 82150	The destabilization of a stratified, rising air-masses system. By Werner Stremmler. 1941. In German. Dissertation presented to Friedrich Wilhelm University, Berlin.	$6.00
7167-7259 PB L 82150	Turbulence physical statistics and hydrodynamics. By Hans Gebelein. 1935. In German. Published by Julius Springer, Berlin.	11.00
7260-7279 PB L 82150	Outline of the present science of color. By Manfred Richter. 1940. In German. Published by Theodor Steinkopff, Dresden and Leipzig.	4.00
7380-7445 PB L 82150	Atmospheric condensation nuclei. By H. Burckhardt and H. Flohn. 1939. In German. Published by Julius Springer, Berlin.	8.00
7446-7582 PB L 82150	Photogrammetry and aerial photography. By R. Hugershof. 1930. In German. Published by Julius Springer, Vienna.	15.00
7583-7630 PB L 82150	Meteors and agriculture. By Pericle Gamba. 1939. In Italian. Published by Ramo Editoriale Degli Agricoltori, Rome.	6.00
7631-7646 PB L 82150	Moisture determination by means of a calorimetric method. By Paul Kothe. 1935. In German. Dissertation presented to the University of Frankfurt am Main.	3.00
7647-7702 PB L 82150	Aims and methods of the investigation of the water supply conditions (precipitation, run-off and drainage areas). By Karl Fischer. 1936. In German.	7.00
7703-7834 PB L 82150	Measuring instruments for telecommunication technique. 1936. In German. Published by Siemens & Halske A. G., Berlin.	15.00

PB L 82081. U.S. OCCUPATION FORCES IN GERMANY. WEATHER SERVICES, BAD KISSINGEN, GERMANY. Publications in climatology and meteorology. (FIAT Microfilm Reel Y 28, Frames 5245-6055) 1915-1943. 811 f. Price: Microfilm-$7.00 - Enlargement Print-$83.00
This reel was prepared by FIAT investigators in Germany. Individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $7.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
5245-5359 PB L 82081	Manual for weather installations. By Fritz Schaerer. 1942. In German. Published by Carl Marhold Verlagsbuchhandlung, Halle (Saale).	$13.00
5360-5419 PB L 82081	Problems in bioclimatology. By F. Linke, B. DeRudder and F. Ruttner. Vol. 1. "Foehn" and Foehneffects. By H. v. Ficker and B. De Rudder. 1943. In German. Published by "Akademische Verlagsgesellschaft Becker & Erler Kom. Ges.," Leipzig.	7.00
5420-5455 PB L 82081	Detailed tables of data for calculating humidity. By Max Robitzsch. 1941. In German. Published by Willibald Keller, Leipzig.	5.00

5456-5489
PB L 82081 — Detailed barometric reduction and altitude tables. By Max Robitzsch. 1939. In German. 5.00
Published by Willibald Keller, Leipzig.

5490-5550
PB L 82081 — Handbook of geophysics. Vol. X, 1st edition. Determination and reality of periodicities. Correlation calculation. By K. Stumpf. 1940. In German. 8.00
Edited by Gebrüder Borntraeger, Berlin.

5551-5718
PB L 82081 — "Wissenschaftliche Forschungsberichte." Series of natural sciences. By Raphael Ed. Liesegang. Vol. 14. Cosmic radiation. By Erwin Miehlnickel. 1938. In German. 18.00
Edited by Theodor Steinkopf, Dresden und Leipzig.

5719-5844
PB L 82081 — Problems of cosmic physics. By Christian Jensen. Vol. XXI. Radiation conditions of inland waters. By Franz Sanberer and Franz Ruttner. 1941. In German. 14.00
Edited by Akademische Verlagsgesellschaft Becker & Erler K.G., Leipzig.

5845-5901
PB L 82081 — Practical theory in flight technique. Vol. 8. Determination of flying performance. By Helmuth Wenke. 1938. In German. 7.00
Edited by Max Gehlen, Berlin.

5902-6055
PB L 82081 — Basic methods and results of temperature measurements. By F. Henning. 1915. In German. 17.00
Edited by Friedrich Vieweg & Sohn, Braunschweig.

PB L 82097. U.S. OCCUPATION FORCES IN GERMANY. WEATHER SERVICE. BAD KISSINGEN, GERMANY. Publications in meteorology. (FIAT Microfilm Reel Y 46, Frames 7835-8713) 1932-1941. 879 f. Price: Microfilm-$7.00 - Enlargement Print-$89.00
This reel was prepared by FIAT investigators in Germany. Individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $7.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
7835-7893 PB L 82097	Wind power plants. By Hermann Honnef. 1932. In German. Published by "Friedr. Vieweg & Sohn A.G., Braunschweig."	$7.00
7894-7941 PB L 82097	Photographs with explanations of meteorological measuring instruments. In German.	6.00
7942-8147 PB L 82097	Dynamic meteorology. By H. Koschmieder. This publication is Vol. 3 of "Physik der Atmosphere." 1941. In German. Edited by the same author and published by "Akademische Verlagsgesellschaft Becker & Erler Kom. Ges., Leipzig.	12.00
8148-8175 PB L 82097	Investigations on aerological synoptics with tables. By Gerhart Schinze. 1939. In German.	4.00
8176-8290 PB L 82097	The practical study of snow and avalanches. By Wilhelm Paulcke, Vol 38 of "Verständliche Wissenschaft." 1938. In German. Published by "Julius Springer," Berlin.	13.00
8291-8393 PB L 82097	The reconnaissance squadron. By Krahmer, Vol 1 of "Der Dienst in der Luftwaffe." 1937. In German. Published by "Bernard & Graefe," Berlin.	12.00
8394-8606 PB L 82097	Physiology of high altitude climate. By A. Loewy. Vol 26 of "Monographien aus dem Gesamtgebiet der Physiologie der Pflanzen und der Tiere." 1932. In German. Published by "Julius Springer," Berlin.	23.00
8607-8713 PB L 82097	Physiology of man in the airplane. By Gustav Schubert. Vol. 34 of "Monographien aus dem Gesamtgebiet der Physiologie der Pflanzen und der Tiere." 1935. In German. Published by "Julius Springer, Berlin."	12.00

PB L 74937. U.S. OCCUPATION FORCES IN GERMANY. WEATHER SERVICE. BAD KISSINGEN, GERMANY. Publications in meteorology and climatology. (FIAT Microfilm Reel W 75, Frames 1916-2778) 1927-1946. 862 f. Price: Microfilm-$6.00 - Enlargement Print-$86.50
This reel was prepared by FIAT investigators in Germany. 54 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. The publications are in German except for a few in French, Dutch and Finnish.

Frames	Title	Price
1916-1933 PB L 74937	The beginning of the spring of 1946 in the U.S. zone of Germany based on observations of the wild flora. By "Deutscher Wetterdienst in U.S. Zone, Zentralamt für Klimatologie," 1946. In German.	$2.00
1934-1942 PB L 74937	Curricula for students in geophysics, meteorology and oceanography. By "Der Reichsminister für Wissenschaft, Erziehung und Volksbildung," 1941. In German.	1.50

Guide to an exhibition (no place, no date).

1943-1951 PB L 74937	Germany's contribution to the development of international meteorology from 1872 up to 1939. In German.	1.50
1952-1954 PB L 74937	Aristotelian works from 1493 up to 1935. In German.	1.50
1954-1955 PB L 74937	Meteorological books of the 16th and 17th century. In German.	1.50
1956-1959 PB L 74937	Calculation of the stratospheric temperature based on measurements of the atmospheric absorption coefficients of the ozone. By R. Penndorf. 1938. In German.	1.50
1960-1961 PB L 74937	Weather service for antiaircraft units. Army report. 1940. In German.	1.50
1962-1977 PB L 74937	Memo on antiaircraft weather for the "Reichswetterdienst" Army order. n.d. In German.	2.00
1978-1998 PB L 74937	Analysis of drawings resulting from the super-imposition of sinus curves. By H. Labronste. 1927. In German.	2.50
1999-2005 PB L 74937	Meteoropathology and reaction pathology of poliomyelitis. By K. v. Neergard. 1942. In German.	1.50
2006-2007 PB L 74937	Airplanes causing cloud formations. By Theo Heber. 1940. In German.	1.50
2008-2010 PB L 74937	The air exchange in a metropolis. By Johannes Grunow. 1936. In German.	1.50

2011-2038 PB L 74937 — Report of the "Zentralamt für Klimatologie, Wiesbaden-Dotzheim" for the period Sep 1945/1946. By the "Deutscher Wetterdienst in der U.S. Zone." In German. 3.00

2039-2052 PB L 74937 — The influence of barometric fluctuations on the blood pressure. By Klaus Maxrath. 1939. In German. 1.50

2053-2058 PB L 74937 — Change of weather and diseases. By Theodor Hättl. 1941. In German. 1.50

2059-2073 PB L 74937 — Ice conditions on rivers and lakes in East Prussia. By "Reichsamt für Wetterdienst." 1944. Visibility conditions near the ground with regard to special military missions. By "Der Leitende Heeresmeteorologie im OKH." In German. 1.50

2074-2098 PB L 74937 — Part 1. 1943. In German. 2.50

2099-2133 PB L 74937 — Part 2. 1944. In German. 2.50

2134-2153 PB L 74937 — Part 3. 1944. In German. 2.00

Part 4 is missing.

2154-2186 PB L 74937 — Part 5. 1945. In German. 3.50

2187-2193 PB L 74937 — Flight meteorological experiences in Greece, Crete and bordering Mediterranean regions. By Pieper. 1942. In German. 1.50

2194-2209 PB L 74937 — Origin and cause of driving sand and sand storms. By Bullig. 1942. In German. 2.00

2210-2234 PB L 74937 — Manual for flight navigation. By "Oberbefehlshaber der Luftwaffe." 1941. In German. 2.50

2235-2249 PB L 74937 — Map grid system. By "Oberbefehlshaber der Luftwaffe." 1943. In German. 1.50

2250-2259 PB L 74937 — Flight meteorological indications (West-Central and North England). By "Reichsamt für Wetterdienst, Berlin." 1944. In German. 1.50

2260-2302 PB L 74937 — The climate of northern and central Italy. By "Reichsamt für Wetterdienst." 1944. In German. 4.50

2303-2330 PB L 74937 — Climatological and astronomical light conditions in Norway. By "Reichsamt für Wetterdienst." 1940. In German. 3.00

2331-2364 PB L 74937 — Flow measurements on ascending observation balloons. By Fr. Herath. n.d. In German. 3.50

2365-2464 PB L 74937 — Climate of the "Ostland" (Includes Baltic states and other eastern European occupied areas). By "Reichsamt für Wetterdienst." 1944. Part 1 & 2. In German. 10.50

2465-2474 PB L 74937 — Temperature conditions in the southern hemisphere. By W. Meinardus. 1939. In German. 1.50

2475-2479 PB L 74937 — Zodiacal light problem. By F. Schmid. n.d. (Will not reproduce well). In German. 1.50

2480-2487 PB L 74937 — Lateral refraction in thunderstorms. By Emmerich Sokob. 1941. In German. 1.50

2488-2494 PB L 74937 — Reports from the "Akademie der Wissenschaften in Göttingen. Mathematics-physics class. Number 1. 1942. In German. 1.50

2495-2504 PB L 74937 — The law of earth radiation. By Wilhelm Meinardus. 1944. In German. 1.50

2505-2529 PB L 74937 — Investigating the use of dial gauges for extensometers and stress testers. By Horst Canitz. 1940. In German. 2.50

2530-2541 PB L 74937 — Supplement to the chronology of the glacial period. By Rudolf Spitaler. 1942. In German. 1.50

2542-2550 PB L 74937 — A general equation of ionization. By Marcel Nicolet. 1942. In French. 1.50

2551-2565 PB L 74937 — Dioptric tables of the atmosphere. By Frantisek and Zdenek Sekera. 1940. In German. 1.50

2566-2576 PB L 74937 — Photometry of the purple light. By Th. Mendelssohn. 1941. In German. 1.50

2577-2586 PB L 74937 — The weather as a factor in illnesses. By William Kapellusch. 1939. In German. 1.50

2587-2609 PB L 74937 — Correcting of thermometer indications for air pressure and friction. By H. J. v. d. Maas and S. Wynia. 1942. Partly in German and partly in Dutch. 2.50

2610-2612 PB L 74937 — The external temperature as basis for design in refrigeration technique. By H. Behringer. n.d. In German. 1.50

2613-2618 PB L 74937 — Air temperature measurements in flight. By W. Polikowskij and W. Kotschetkow. 1938. In German. 1.50

2619-2631 PB L 74937 — New investigations on radiation properties of snow. By F. Prohaska and Chr. Thams. n.d. In German. 1.50

2632-2636 PB L 74937 — Prevention of snow drifts. By Schaible. 1941. In German. 1.50

2637-2666 PB L 74937 — Various articles from the Finnish periodical "Terra" of the "Finnish geographical society." 1942. In Finnish. 3.00
Edited by Väino, J. G. Granö and Henrik Renquvist, 54th year. Copies 3-4.

2667-2696 PB L 74937 — Traces of substances decide our destiny. By Emil Abderhalden. 1944. In German. 3.00

2697-2736 PB L 74937 — The physiological effects of high altitude climate. By K. Bürker, B. Gollatz, M. H. Silberger and G. Schmall. 1943. In German. 4.00

2737-2740 PB L 74937 — The experimental basis of the dipol induction method. By A. Rössiger. 1939. In German. 1.50

2741-2750 PB L 74937 — Instrumental error in wind measurements of two theodolites. By Al. Grigoriv. 1940. In French. 1.50

2751-2755 PB L 74937 — The meteorological course of the dry period in connection with the accumulation of water in the soil. By Rudolf Geiger. 1939. In German. 1.50

2756-2760 PB L 74937 — Thermal depression influencing weather conditions. By Basil Isajiw. 1943. In German. 1.50

2761-2769 PB L 74937 — Remarks on the "Dufrénois-Lhoste" method for determining the ballistic air density. By C. Kihn and R. Sänger. 1941. In German. 1.50

Meteorology and Climatology (contd)

2770-2778 PB L 74937 — Investigations for detecting small amounts of carbon monoxide in the atmospheric. By Aloys Plange. 1940. In German. 1.50

PB L 82091. U. S. OCCUPATION FORCES IN GERMANY. WEATHER SERVICES, BAD KISSINGEN, GERMANY. Reports in climatology and meteorology. (FIAT Microfilm Reel Y 62, Frames 6630-7201) 1939-1942. 572 f. Price: Microfilm-$7.00 - Enlargement print-$59.00

This reel was prepared by FIAT investigators in Germany. 12 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $7.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price

The "Reichsamt für Wetterdienst, Berlin," published the following seven articles in 1942:

6631-6685 PB L 82091 — Climatic sketch of Tauris (South Ukraine and Crimea). In German. $7.00

6686-6701 PB L 82091 — The occurrence of drought in the European regions of the U. S. S. R. In German. 3.00

6702-6722 PB L 82091 — Conditions of water levels in European Russia in the summer season. In German. 3.00

6723-6732 PB L 82091 — Soil frost in the European part of Russia (up to 60° north latitude). In German. 2.00

6733-6750 PB L 82091 — Melting of the snow, softening, soaking and drying of the soil in the Ukraine. In German. 3.00

6751-6805 PB L 82091 — Climate and agriculture of Caucasia. In German. 7.00

6806-6843 PB L 82091 — High water conditions in the spring in Russia. In German. 5.00

6844-6869 PB L 82091 — Contribution to the psychrometric measurement of humidity. By Elisabeth de Bary. 1939. In German. 4.00
Dissertation submitted to the faculty of mathematics and natural sciences of the University of Berlin.

6870-6961 PB L 82091 — Tables and problems for the harmonic analysis and periodogram calculation. By Karl Stumpf. 1939. In German. 11.00
Published by Julius Springer, Berlin.

6962-7031 PB L 82091 — Elements of operator calculations with geophysical applications. By Hans Ertel. 1940. In German. 8.00
Published by Julius Springer, Berlin.

7032-7161 PB L 82091 — Mathematics for physicists and engineers. Vol. 1, Mathematical instruments. By W. Meyer. 1941. In German. 14.00
Published by Akademische Verlagsgesellschaft Becker & Erler, Kom.-Ges., Leipzig.

7162-7201 PB L 82091 — Glass instruments, volume 5. Methods and apparatus for the determination of dust and particle contaminations of the air. By Walter Grundmann. 1942. In German. 5.00
Published by Glas und Apparat/R. Wagner Sohn, Weimar.

PB L 82154. U. S. OCCUPATION FORCES IN GERMANY. WEATHER SERVICE, BAD KISSINGEN, GERMANY. Reports in meteorology and climatology. (FIAT Microfilm Reel Y 54, Frames 2469-3176) 1934-1943. 708 f. Price: Microfilm-$7.00 - Enlargement print-$73.00

This reel was prepared by FIAT investigators in Germany. 15 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $7.00. Please include PB and frame numbers when ordering individual items. In German and French.

Frames	Title	Price

2469-2569 PB L 82154 — Synthesis of the knowledge on hoarfrost. By "Groupment français pour le development des recherches aéronautiques (G.R.A.)." Technical report No. 7. Clermont-Ferrand. 1943. In French. $12.00
Also several short articles from meteorological books.

The following reports were written under the "Institut royal météorologique de Belgique" and published by "Etablissement d'imprimerie l'Avenir", Bruxelles. 1938/40. In French.

2570-2589 PB L 82154 — The Northern Lights from Jan. 25/26, 1938. By S. De Backer. In French. 3.00

2590-2602 PB L 82154 — The first example of an analysis of a cyclone in space and time. By J. Van Mieghem. In French. 3.00

2603-2626 PB L 82154 — The characteristic principles of the rain in Belgium. By L. Poncelet. In French. 4.00

2627-2639 PB L 82154 — Aerodynamic studies of pluviometers. By A. Descamp. In French. 3.00

2640-2654 PB L 82154 — Climatological notes on the rain in Belgium. By L. Poncelet. In French. 3.00

2655-2670 PB L 82154 — Synoptic study on the fog in Belgium. By L. Dufour. In French. 3.00

2671-2677 PB L 82154 — Chemical warfare agents. By "Kommando des Flughafenbereichs Ansbach." 1939. In German. 2.00

2678-2733 PB L 82154 — Relations between direction of wind, temperature, and sunshine, and their peculiarities in the atmospheric conditions in Central Germany. A book of the "Reichsamt für Wetterdienst" by Hans Elger. In German. 7.00

The "Institut royal météorologique de Belgique" published the following French articles:

2734-2808 PB L 82154 — The rate of climb of rubber balloons. By L. Poncelet. "Mémoires," vol. 13. 1940. In French. 9.00
Published by "Etablissements d'imprimerie l'Avenir", Bruxelles.

2809-2890 PB L 82154 — The rain in the Belgian Congo. By A. Vandenplas. "Mémoires," vol. 16. 1943. In French. 10.00
Published by IMIVI, S.A., Bruxelles.

2891-2979 PB L 82154 — Instruction material for meteorology courses. By the "Reichsamt für Wetterdienst," 2d edition. 1938. In German. 10.00

2980-3066 PB L 82154 — A new conception of the nature of the universe ether. By Ferdinand Zunker. n. d. In German. 10.00

3067-3101 PB L 82154 — The dry boundaries of North America. By J. Pittelkow. 1928. In German. 5.00

Doctor's thesis submitted to the philosophical faculty of the University of Berlin.

3102-3176 PB L 82154 — The cold waves in North America and their invasion into the American Mediterranean regions. By Otto Link. 1934. In German. 9.00
Doctor's thesis submitted to the philosophical faculty of the University of Wuerzburg.

PACKING AND PACKAGING

PB L 81483. U. S. WAR DEPARTMENT. Storage in the zone of interior. (Tech Manual 38-402). War 1946. 135 p. Price: Microfilm-$4.25 - Photostat-$14.00 (Available from the Supt of Docs. Washington 25, D. C., 45¢). Principles and procedures of military storage are set forth, covering the following operations: Space layout; materials handling; storage methods; care and preservation of supplies; receiving; shipping; packing room; labor; protection of supplies; and storage at posts, camps, and stations. Photographs, drawings and diagrams are abundant.

PHOTOGRAPHIC AND OPTICAL GOODS (INCLUDING PHOTOGRAPHIC PROCESSING)

PB L 73125. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Calculations and drawings for objectives. (FIAT Microfilm Reel I-5, Frames 1-1074) 1928-1942. 1074 f. Price: Microfilm-$6.00 - Enlargement print-$108.00
This FIAT microfilm reel consists of calculations, data and drawings for objectives as listed below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
1-117 PB L 73125	Telar objective, f=150 mm, 1:2. 1936. In German. Calculations, drawings and graphs included.	$12.00
118-220 PB L 73125	Epis objectives f=1000 mm, 1300 mm and 1600 mm. 1:5. 1940. In German. Calculations, graphs and drawings included.	10.50
221-245 PB L 73125	Achromats for the Telefunken A.G., f from 20,0 mm to 76.66 mm. 1935. In German. Calculations, graphs and drawings included.	2.50
246-380 PB L 73125	Observation loupe, 2.5 x f=100 mm. 1938. In German. Calculations and drawings included.	13.50
381-425 PB L 73125	Hektor objective, f=600 mm, 1:8,6 for drawing apparatus. 1938. In German. Calculations, drawings and graphs included.	4.50
426-464 PB L 73125	Microscope objective Fedorow I. 1932. In German. Calculations and drawings included.	4.00
465-529 PB L 73125	Microscope objective Fedorow II. 10x, A=0.15. n.d. In German. Calculations, drawings and graphs included.	6.50
530-614 PB L 73125	Microscope objective Fedorow III. 12.86x, A=0.22. n.d. In German. Calculations, graphs and drawings included.	8.50
615-666 PB L 73125	Microscope objective Fedorow IV. 19.32x, A=0.20. n.d. In German. Calculations, graphs and drawings included.	5.50
667-719 PB L 73125	Objective for monochromator f=200 mm. 1:5. n.d. In German. Calculations, graphs and drawings included.	5.50
720-724 PB L 73125	Eyepiece for Leifo equipment. n.d. In German. Calculations included.	1.50
725-737 PB L 73125	Microscope objectives f=22.78 mm and f=12.62 mm. n.d. In German. Drawing and calculations included.	1.50
738-745 PB L 73125	Ultramicroscope objectives UM 1, UM 2, UM 3 and UM 4. 10x to 20x. n.d. In German. Drawings and data included.	1.50
746-769 PB L 73125	Teleobjection for Mechau projectors, f from 120 mm to 209.6 mm. 1928. In German.	2.50
770-808 PB L 73125	Notes and drawings for Permanent 3 projection optics used in Mechau projectors. Teleobjectives f from 80 to 1000 mm. 1928-1931. In German.	4.00
809-877 PB L 73125	Miniature film projection objective for Mechau equipment f=50 mm 1:1.8. n.d. In German. Drawings, graphs and calculations included.	7.00
878-985 PB L 73125	Projection objective for Mechau equipment f=150 mm. 1928. In German. Calculations, drawings and graphs included.	11.00
986-1021 PB L 73125	Data with drawings on component lenses of unidentified objectives. 1937. In German.	4.00
1022-1074 PB L 73125	Data with drawings on component lenses of the following objectives. 1937-1942. In German.	5.50
1022-1028 PB L 73125	Telyt 1:4.0 f=75 mm. In German.	1.50
1029-1032 PB L 73125	Telyt 1:5,0 f=400 mm. In German.	1.50
1033-1034 PB L 73125	Telyt 1:5.7 f=200 mm. In German.	1.50
1035-1036 PB L 73125	Elmars 1:4.5 f=135 mm and 105 mm. In German.	1.50
1037-1038 PB L 73125	Petzval f=120 mm. In German.	1.50
1039-1041 PB L 73125	Ultramicroscope objectives UM 1 and UM 3. In German.	1.50
1042-1043 PB L 73125	Elmar 1:4 f=95 mm. In German.	1.50
1044 PB L 73125	Petzval f=60 mm. In German.	1.50
1045-1046 PB L 73125	Hektor 1:2,5 f=85 mm and f=100 mm. In German.	1.50
1047-1050 PB L 73125	Elmars 1:4, f=90 mm and f=180 mm. In German.	1.50
1051 PB L 73125	Hektor 1:2,5 f=50 mm, for miniature films. In German.	1.50
1052 PB L 73125	Elmar 1:3,5 f=35 mm. In German.	1.50
1053 PB L 73125	Objective f=120 mm. In German.	1.50
1054-1055 PB L 73125	Thambar 1:2,2 f=90 mm. In German.	1.50
1056 PB L 73125	Hektor 1:6,3 f=28 mm. In German.	1.50
1057-1059	Elmar 1:3,5 f=50 mm. In	

PB L 73125 German. 1.50
1060-1061 Xenon 1:1,5 f=50 mm. In
PB L 73125 German. 1.50

1062 Epis 1:3,6 f=80 mm. In German. 1.50
PB L 73125

1063-1066 Milars f=40 mm, 50 mm, 65 mm and
PB L 73125 100 mm. In German. 1.50

1067-1069 Summars 1:4,5 f=80 mm and 120 mm.
PB L 73125 In German. 1.50

1070-1073 Micro-Summars f=3,5 and 2,4 mm.
PB L 73125 In German. 1.50

1074 Hektor Rapid 1:2,4 f=25 mm.
PB L 73125 In German. 1.50

PB L 73155. LEITZ, ERNST, G. M. B. H., WETZLAR, GERMANY. Calculations and drawings for objectives, oculars, condensers and prisms. (FIAT Microfilm Reel I 35, Frames 3720-4461) 1896-1941. 742 f. Price: Microfilm-$6.00 - Enlargement print-$74.50.
This FIAT microfilm reel consists of drawings, calculations and data for objectives, oculars, condensers and prisms as listed below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
3720-3759 PB L 73155	Achromat for water immersion 50x, f= 3.63 mm. Calculations, description and photograph. 1925. In German.	$ 4.00
3760-3835 PB L 73155	Objective for water immersion 75x, f= 2.26 mm. Calculations, drawings and data. 1931. In German.	8.00
3836-3853 PB L 73155	Two-lens ultraviolet condenser 68.5x A= 1.0, f= 6.4 mm. Calculations and drawings. 1920. In German.	2.00
3854-3935 PB L 73155	Telescope objective 150 mm. Calculations. 1905. In German.	8.50
3936-4113 PB L 73155	Apochromatic condensers for various microscopes. Drawings, calculations and description. 1905. In German.	18.00
4114-4129 PB L 73155	Photographic loupe f= 42.7 mm. Calculations. 1896. In German.	2.00
4130-4149 PB L 73155	Photographic loupes f= 41.2 mm and 42.2 mm. Calculations. 1895. In German.	2.00
4150-4201 PB L 73155	Photographic loupe. Calculation. 1902. In German.	5.50
4202-4204 PB L 73155	Loupe for film observation. Calculations. 1933. In German.	1.50
4205-4259 PB L 73155	Achromat for metallurgical microscopes. Calculations and photograph. 1941. In German.	5.50
4260-4269 PB L 73155	Prism for binocular microscopes. Drawing and calculations. 1906. In German.	1.50
4270-4281 PB L 73155	Formulas for the calculation of cement shells. Drawings. 1901. In German.	1.50
4282-4286 PB L 73155	Calculation of sagittal and meridinal rays. 1901. In German.	1.50
4286 PB L 73155	Loupe 40x f= 5.87 cm. Data. n.d. In German.	1.50
4287-4304 PB L 73155	Objectives for binocular microscope according to Greenough, f= 32.0 mm. Data. n.d. In German.	2.00
4305 PB L 73155	Steinheil's loupe, 8x, f= 35.09 mm. Data. 1913. In German.	1.50
4306-4312 PB L 73155	Steinheil's loupe 10x, f= 27.96 mm. Data. 1913. In German.	1.50
4313-4319 PB L 73155	Mineralogical condenser 5:1. Drawings and data. n.d. In German.	1.50
4320 PB L 73155	Achromatic loupe 5x. Drawings and data. n.d. In German.	1.50
4321-4328 PB L 73155	Fluorite objectives with a wide angle of view. Drawings and data. 1908. In German.	1.50
4329-4351 PB L 73155	Aplanatic loupe, 6x. Drawings and data. 1912. In German.	2.50
4352-4355 PB L 73155	Confocal objectives. Drawings and data. 1907. In German.	1.50
4356-4361 PB L 73155	Objective 1/12 for oil immersion. Drawings and data. 1906. In German.	1.50
4362 PB L 73155	Fluorite objective f= 15.5 mm. Drawings and data. 1913. In German.	1.50
4363-4365 PB L 73155	Periplanatic oculars. Drawings and data. 1914. In German.	1.50
4366-4389 PB L 73155	Unidentified calculations. n.d. In German.	2.50
4390-4411 PB L 73155	Objective 3, f= 15.12 mm. Drawings and data. 1914. In German.	2.50
4412-4461 PB L 73155	Fundamental lens calculations and formulas. n.d. In German.	5.00

PB L 73119. LEITZ, ERNST, G. M. B. H., WETZLAR, GERMANY. Calculations and drawings for optical instruments. (FIAT Microfilm Reel H 36, Frames 2617-3409) 1926-1944. 793 f. Price: Microfilm-$6.00 - Enlargement print-$79.50.
This FIAT microfilm reel consists of calculations and technical drawings for optical lenses and instruments as listed below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German. Many frames are illegible, as indicated below.

Frames	Title	Price
2617-2625 PB L 73119	Illegible.	
2626-2627 PB L 73119	Opak illumination equipment. Drawing. 1929. In German.	$ 1.50
2628-2631 PB L 73119	Illegible.	
2632-2633 PB L 73119	Panphot ocular. Drawings. n.d. In German.	1.50
2634-2636 PB L 73119	Illegible.	
2637 PB L 73119	Complementary double condenser for microscopes. Drawings. n.d. In German.	1.50
2638-2644 PB L 73119	Illegible.	
2645-2648, 2651, 2659-2661 PB L 73119	Small two-lens condenser A=1.20. Drawing. Partly illegible. n.d. In German.	1.50
2649, 2664-2665 PB L 73119	Three-lens condenser A=1.40. Drawing. n.d. In German.	1.50
2650, 2654 PB L 73119	Aplanatic and achromatic condenser A=1.60. Drawing. n.d. In German.	1.50

2652
2666
PB L 73119 — Spherical and achromatic condenser A=1.0. Drawing. n.d. In German. 1.50

2653, 2658
PB L 73119 — Condenser for a micromanipulator A=0.75. Drawing. n.d. In German. 1.50

2655-2656
PB L 73119 — Two-lens condenser. Poor frames. Drawings. n.d. In German. 1.50

2657
PB L 73119 — Condenser for polarization apparatus, A=1.00. Drawing. 1931. In German. 1.50

2662-2663
PB L 73119 — Summar condenser. Drawings. 1927. In German. 1.50

2667
PB L 73119 — Large two-lens condenser, A=1.20. 1923. In German. 1.50

2668-2677
PB L 73119 — Reversing system for microscopes. Objective 1.5 : 1. Drawing and calculations. 1940. In German. 1.50

2678-2699
PB L 73119 — Huyghenian oculars. Drawings and calculations. Some frames illegible. n.d. In German. 2.50

2700-2755
2768-2781
PB L 73119 — Objectives O, 1h, 1s, 1k, 1a, 1b, 2a, 2b, 3, 3a, 3b, 4, 5, 6, 6L, 6a, 7, 7a, 8, 8a and 9. Drawings. 1923-1937. Some frames are illegible. In German. 7.50

2756-2760
2782-2790
PB L 73119 — Objectives 1/7, 1/10, 1/12 and 1/16 for water immersion. Drawings, some of which are illegible. n.d. In German 1.50

2761-2767
PB L 73119 — Objective 1/12, f=2.0 mm. A=1.20. Drawings. 1923. Partly illegible. In German. 1.50

2791-2792
PB L 73119 — Objective 2 mm. A=1.32. Drawing. 1923. In German. 1.50

2793-2795
PB L 73119 — Illegible.

2796-2800
PB L 73119 — Objective 3 mm. Drawings. 1929. In German. 1.50

2801-2811
PB L 73119 — Objective 8 mm for oil immersion. Drawings. Several frames illegible. 1928. In German. 1.50

2812-2822
PB L 73119 — Objective 16 mm for oil immersion. Drawings. 1928. Several frames illegible. In German. 1.50

2823
PB L 73119 — Objective 3H. Drawing. 1923. In German. 1.50

2824-2825
PB L 73119 — Illegible

2826
2828
PB L 73119 — Objective for school microscopes. Drawing. 1926. In German 1.50

2827
PB L 73119 — Objective H 30 mm. Drawing. 1926. In German. 1.50

2829-2832
PB L 73119 — Illegible.

2833-2854
2942-2960
PB L 73119 — Intermediate system for metallographic microscopes. f=250 mm. Calculations. 1938. A few poor frames. In German. 4.50

2855-2901
PB L 73119 — Objective J. M. 7 for oil immersion. f=6.9 A 0.65. Calculations. n.d. In German. 5.00

2902-2918
PB L 73119 — Objective, f=50.0 mm A 0.08. Calculations and illegible pencil drawings. n.d. In German. 2.00

2919-2941
PB L 73119 — Optics for surface testing apparatus. Calculations and illegible pencil drawings. n.d. In German. 2.50

2966-3110
PB L 73119 — Fluorite system, 70X A 0.90. Calculation. Some frames will not reproduce well. n. d. In German. 4.50

3111-3117
PB L 73119 — Special two-diaphragm condenser for microscopes with counting cell. Calculations and drawing. 1938. In German. 1.50

3118-3135
PB L 73119 — Objective J 26-4 for oil immersion f=3.802995 A=1.15. Drawings and calculations. 1938. Drawings will not reproduce well. In German. 2.00

3136-3145
PB L 73119 — Objective f=3.15 mm A=1.20 for water immersion. Calculations. Some frames will not reproduce well. n.d. In German. 1.50

3146-3210
PB L 73119 — Objective f=4.14 mm A=1.0 for water immersion. Calculations. 1936. In German. 6.50

3211-3223
PB L 73119 — Microscope objective f=25.00 mm A=0.178. Trial calculation. Some frames will not reproduce well. n.d. In German. 1.50

3224-3253
PB L 73119 — Microscope objective f=5.51 mm A=0.80 calculation. 1941. In German. 3.00

3254-3281
PB L 73119 — Apochromat f=5.00 mm A=0.90. Calculation and drawings. 1940. In German. 3.00

3282-3283
PB L 73119 — Microscope stand MOP. Drawings. 1927. In German. 1.50

3284-3287
PB L 73119 — Binocular tube for an objective. Drawings. 1927. In German. 1.50

3288
PB L 73119 — Microscope with a revolving filter disc. Drawings. 1940. In German. 1.50

3289-3300
PB L 73119 — Optics for Panphot equipment. Drawings, some of which will not reproduce well. 1938-1940. In German. 1.50

3301-3306
PB L 73119 — Illegible.

3307-3308
PB L 73119 — Binocular tube for unidentified patent application. Drawings. n.d. In German. 1.50

3309-3312
PB L 73119 — Central microscope stand. Drawings, partly illegible. n.d. In German. 1.50

3313-3322
PB L 73119 — Analyzer for Ultropak and Panopak equipment. Drawings, partly illegible. 1939. In German. 1.50

3323-3327
PB L 73119 — Heating table for chemical microscopes according to Prof. Weygand. Drawing which may not reproduce well. 1938. In German. 1.50

3328
PB L 73119 — Ocular with an elliptical analyzer. Drawings. 1936. In German. 1.50

3329-3337
PB L 73119 — Device for testing prism surfaces. Drawings. 1940. In German. 1.50

3338-3343
3370
PB L 73119 — Projection lamps. Drawings. 1927. In German. 1.50

3344-3345
PB L 73119 — Enlargement apparatus, 4½ x 6 cm. Drawings. n.d. In German. 1.50

3346-3347
3349-3350
PB L 73119 — Leitz incandescent lamps. Drawings. 1926. In German. 1.50

3348 PB L 73119 — Simplified telescope optics. Drawing. n.d. In German. 1.50

3351-3352 PB L 73119 — Illegible.

3353-3354 PB L-73119 — Cardiograph according to Prof. Weber. Drawings. 1942. In German. 1.50

3355-3367 PB L 73119 — Attachment camera for a microscope. Drawings. 1929. In German. 1.50

3368-3369 PB L 73119 — Apparatus for testing spinning nozzles. Drawings. n.d. In German. 1.50

3371-3372 PB L 73119 — Illegible.

3373 PB L 73119 — Photograph of a profile projection apparatus. n.d. In German. 1.50

3374-3375 PB L 73119 — Loupe with working distance 250 mm. Drawings. n.d. In German 1.50

3376 PB L 73119 — Microscope. Drawing. 1944. In German. 1.50

3377-3382 PB L 73119 — Microscope lens system 1.5 : 1. Drawings. 1940. In German. 1.50

3383 PB L 73119 — Focusing loupe. Drawing. 1926. In German. 1.50

3384-3386 PB L 73119 — Illegible.

3387-3398 PB L 73119 — Leica stereoscopic attachment. Drawings. 1940. In German. 1.50

3399-3400 PB L 73119 — Dilatometer H.T.V. 2x. Drawings. 1934. In German. 1.50

3401-3402 PB L 73119 — Illegible.

3403 PB L 73119 — Microscope attachment camera. Drawing. 1929. In German. 1.50

3404 PB L 73119 — Illegible.

3405-3409 PB L 73119 — Stereoscopic binocular tube. Drawings. 1928. In German. 1.50

PB L 73191. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Calculations and drawings for telescopes and telescopic sights. (FIAT Microfilm Reel N 4, Frames 1734-2454). 1936-1945. 720 f. Price: Microfilm-$6.00 - Enlargement Print $72.00

This FIAT microfilm reel consists of calculations and drawings for the optics of monocular and binocular telescopic gun sights as listed below. The individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German. A considerable number of frames will not reproduce well.

Frames	Title	Price
1734-1764 PB L 73191	Correspondence concerning drawings, and calculations for an improved eyepiece for binocular turret telescopic sight TZF 4. 1936. In German. Some frames will not reproduce well.	$3.50
1765-1830 PB L 73191	Optical system for turret telescopic sight TZF 5d. 1940. In German. Calculations, drawings and correspondence with the Army High Command. Many frames will not reproduce well.	8.00
1831-1891 PB L 73191	Turret telescopic sight TZF 7. 1938. In German. Calculations, data and drawings for its optical system.	6.50
1892-1909 PB L 73191	Calculation of light penetrability of binocular AA gun sight 10 x 80. 1939. In German.	2.00
1910-1921 PB L 73191	Optical system for telescopic gun sight Sfl TZ 1. 1939. In German. Calculations and drawings. Several frames will not reproduce well.	1.50
1922-1936 PB L 73191	Optics for binocular telescope 27E 1001, 6 x 30. 1939-1945. In German. Drawings and calculations.	1.50
1937-1954 PB L 73191	Optics for binocular telescopic sight Sfl TZ II, 3 x 20. 1939. In German. Drawings and calculation.	2.00
1955-1963 PB L 73191	Optics for binocular telescopic sight Sfl TZ III, 5 x 8. 1939. In German. Drawings and calculation.	1.50
1964-1980 PB L 73191	Telescopic sight for Pal 82 B 2,5x. 1939. In German. Calculations and drawings. Some frames will not reproduce well.	2.00
1981-2023 PB L 73191	Telescopic sight Sfl TZ I and Sfl TZ II, 1.5x and 3x respectively, angle of vision 30°. 1939. In German. Calculations and drawings.	4.50
2024-2052 PB L 73191	Anti-aircraft binocular telescopic sight 1940, 10 x 60 and 40 x 100. 1940. In German. Photographs, drawings and calculations.	3.00
2053-2075 PB L 73191	Telescopic sight Sfl TZ I. (1940 model). In German. Calculations and drawing for its optics.	2.50
2076-2082 PB L 73191	Telescopic sight Sfl TZ II. 2.3x, angle of view 15°. (1940 model). In German. Calculations and drawings.	1.50
2083-2094 PB L 73191	Telescopic sight Sfl TZ 1 and 1a, 5x, angle of view 8°. (1940 model). In German. Drawings, calculations and data tables.	1.50
2095-2098 PB L 73191	Data for special monocular navy telescope 30 x 208 mm, objective f = 1000 mm, 1:4.8. 1940. In German.	1.50
2099-2113 PB L 73191	Telescope Rg 43. 30 x 180 and 12 x 84. Objective f = 750 mm, 1:4,16, eyepiece f = 25 mm. and objective f = 300 mm, 1:3,57, eyepiece f = 25 mm. 1942. In German. Data, drawings and calculations.	1.50
2114-2193 PB L 73191	Binocular turret telescopic sight TZF 12. 5x, angle of view 15°. 1942. In German. Drawings, calculations data, and description.	8.00
2194-2208 PB L 73191	Panoramic telescopes 36, 37 and 38. 1942. In German. Drawings, data and calculations.	1.50
2209-2293 PB L 73191	Stabilized telescopic sight SZF 1, 3x and 6x. Objective f = 100 mm, ocular f = 34.2 mm. 1943. In German. Calculations, drawings and data. Some frames will not reproduce well.	8.50
2294-2299 PB L 73191	Turret telescopic sights TZF 2 by Zeiss and TZF 3 by Busch. 1938. In German. Drawings and data. Several frames will not reproduce well.	1.50

2300-2388 PB L 73191	Reports on telescopic sights, business trips, minutes of conferences etc. 1943. In German. Practicably illegible.	9.00
2389-2408 PB L 73191	Turret telescopic sight TZF 9c, with variable enlargement 2,5x and 5x. 1943. In German. Drawings, notes and calculations. May not reproduce well.	2.00
2409-2454 PB L 73191	Telescopic sight with variable enlargement 2x and 5x. 1943. In German. Calculations and drawings.	5.00

PB L 73189. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Calculations for an ocular and a chromatic compensation system. (FIAT Microfilm Reel N 2, Frames 1034-1213) 1946. 180 f. Price: Microfilm-$2.75 - Enlargement print-$18.00.
This FIAT microfilm reel consists of calculations for a periplanatic ocular and for a compensating system for the chromatic enlargement differences in microscope objectives. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $2.75. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
1034-1064 PB L 73189	Periplanatic eyepiece 20x with a high exit pupil. Calculations and diagrams. n. d. In German. Some frames will not reproduce well.	$ 3.50
1065-1213 PB L 73189	Supplementary optical system for the compensation of chromatic enlargement differences in microscope objectives. Three trial calculations with explanation and drawings. 1946. In German.	15.00

PB L 73161. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Drawings and calculations for objectives and oculars. (FIAT Microfilm Reel I 41, Frames 9652-9999 and 1-1008) 1899-1944. 1356 f. Price: Microfilm-$6.00 - Enlargement print-$136.00.
This FIAT microfilm reel consists of calculations and drawings for objectives and eyepieces as listed below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
9652-9669 PB L 73161	Achromat 1, 3.2x, f = 40.0 mm. Calculations and drawing. 1944. In German.	$ 2.00
9670-9700 PB L 73161	Terrestrial eyepieces according to Kellner. Data. 1907. In German.	3.50
9701-9760 PB L 73161	Periplan objective 3, f = 18.0 mm. Calculations. 1918. In German.	6.00
9761-9877 PB L 73161	Objective for oil immersion 1/12, f = 1.86 mm. Calculations and drawing. 1894 and 1900-1903. In German.	12.00
9878-9911 PB L 73161	Achromat 1a, f = 33 to 24 mm. Calculations. n.d. In German.	3.50
9912-9999 1-21 PB L 73161	Sumnar objectives, f from 150 mm to 400 mm. Data and drawings. 1908. In German.	11.00
22-109 PB L 73161	Periplanatic eyepieces; enlargement from 2x to 25x, f from 12.6 mm to 125 mm. Calculations and drawings. 1929. In German.	9.00
110-129 PB L 73161	Achromat 7, 62x f= 2.94 mm. Calculations and drawings. 1922. In German.	2.00
130-190 PB L 73161	Achromatic anastigmat f= 150.0 mm, 1:6.5. Calculations and drawings. 1898-1902. In German.	6.50
191-282 PB L 73161	Microscope objectives 1/12. Calculation, data and drawings. 1906-1908. In German.	9.50
283-346 PB L 73161	Formulas for calculation of diagonal ray refraction. n. d. In German.	6.50
347-357 PB L 73161	Article by Johann Zschucke on a cell for microscopic counting of helminth ova and scollices published in an unspecified issue of the "Archiv für Schiffs- und Tropenhygiene." n. d. In German.	1.50
358-475 PB L 73161	Correspondence, notes, calculations and drawings pertaining to controversial patent questions in regard to rapid photographic objectives. 1899-1901. In German.	12.00
476-530 PB L 73161	Achromat 5, f = 5.4 mm. Calculation. 1907. In German.	5.50
531-567 PB L 73161	Fluoriteobjective 1/12a. Calculation 1907, recalculations. 1920. In German.	4.00
568-680 PB L 73161	Fluorite objective 1/16a. f = 1.56 mm. Calculations 1907, recalculations 1920. In German.	11.50
681-906 PB L 73161	Fluorite objectives 1/12 A and B. Calculations. 1906. In German.	23.00
907-1008 PB L 73161	Fluorite objective K 1. Calculations. 1906. In German.	10.50

PB L 73158. LEITZ, ERNST, G. M. B. H., WETZLAR, GERMANY. Drawings and calculations for objectives, oculars and condensers, etc. (FIAT Microfilm Reel I 38, Frames 6538-7509) 1894-1941. 972 f. Price: Microfilm-$6.00 - Enlargement print-$97.50
This FIAT microfilm reel consists of calculations and drawings for objectives, oculars and condensers, and literature of various optical firms. Individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
6538-6542 PB L 73158	Binocular tube attachment for a special microscope. Calculations. 1933. In German.	$ 1.50
6543-6587 PB L 73158	Condenser for a special microscope manipulator. Calculations and drawing. 1929-1930. In German.	4.50
6588-6609 PB L 73158	Pamphlets dealing with a patent controversy between C.P.Goerz, Berlin and C. A. Steinheil fils, Paris (a branch of C. A. Steinheil Söhne in Munich) and Carl Zeiss, Jena: literature on photographic apparatus and lenses. 1897. In German.	2.50
6610-6618 PB L 73158	C. A. Steinheil Söhne, Munich prospectus of 1894. In German.	1.50
6619-6623 PB L 73158	Carl Zeiss, Jena, prospectus on photographic objectives. 1894. In German.	1.50
6624-6669 PB L 73158	C. A. Steinheil Söhne, Munich, prospectus on photographic objectives and adver-	

tising material of other German and French optical manufacturers and dealers. 1894-1895. In German. 5.00

6670-6693 PB L 73158 — Leitz prospectus on microphotographic apparatus. n.d. In German. 2.50

6694-6713 PB L 73158 — Projection ocular f= 42 mm. Calculations. 1920. In German. 2.00

6714-6725 PB L 73158 — Ocular 8. Calculations. 1905. In German. 1.50

6726-6757 PB L 73158 — Projection ocular III, f= 22.58. Calculations and drawing. 1910. In German. 3.50

6758-6885 PB L 73158 — Spherical achromatic condenser f= 14.65 mm A=0.30. Drawing and calculations. 1925. In German. 3.00

6886-7026 PB L 73158 — Objective 26, f= 18.58 mm. Calculations. 1917. In German. 14.50

7027-7169 PB L 73158 — Achromatic condenser. Calculations. 1908. In German. 14.50

7170-7246 PB L 73158 — Notes and calculations of achromatism of individual lenses and lens systems. 1896-1897. In German. 8.00

7247-7283 PB L 73158 — Condenser for microprojection f= 10.64 mm. Drawing and calculations. 1941. In German. 4.00

7284-7345 PB L 73158 — "Steinbach" condenser. Calculations. 1930. In German. 6.50

7346-7509 PB L 73158 — Objective 2. Calculations. 1916. In German. 16.50

PB L 73179. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Drawings and parts lists for microscopes, cameras, projection apparatus and accessories. (FIAT Microfilm Reel M 12, Frames 4436-5278) 1932-1941. 843 f. Price: Microfilm $6.00 - Enlargement print-$84.50.
This FIAT microfilm reel consists of parts lists and drawings for cameras, microscopes, illumination apparatus, projection objectives and accessories as listed below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
4436-4442 PB L 73179	Leica reflex camera for metallographic microscopes. Drawings. 1940. In German.	$ 1.50
4443-4508 PB L 73179	Small macroscopic ring illumination. Drawings and parts list. 1932. In German.	7.00
4509-4569 PB L 73179	Microscopic ring illumination. Parts lists and drawings. 1932. In German.	6.50
4570-4591 PB L 73179	Small metallographic microscope M. III. Parts list and drawings. 1934. In German.	2.50
4592-4681 PB L 73179	Epiphot metallographic microscope. Parts list and drawings. 1936-1938. In German.	9.00
4682-4695 PB L 73179	Large hand press. Parts list and drawings. 1934. In German.	1.50
4696-4723 PB L 73179	Opal lamp for metallographic microscopes, 100 watt. Drawings. 1936. In German.	3.00
4724-4755 PB L 73179	Opak illumination for direct and transmitted light. Parts list and drawings. 1938. In German.	3.50
4756-4775 PB L 73179	Magnetic adjustment apparatus for metal sections for Epiphot. Drawings. 1937. In German.	2.00
4776-4789 PB L 73179	Film camera for metallographic microscopes. Drawings. 1937. In German.	1.50
4790-4803 PB L 73179	Projection objective I, f= 70 mm. Drawings. 1937. In German.	1.50
4804-4811 PB L 73179	Homeopathic objective Projektar IIIa, f= 40 mm. Parts list and drawings. 1936. In German.	1.50
4812-4821 PB L 73179	Homeopathic objective Projektar I, f = 70 mm. Parts list and drawings. 1940. In German.	1.50
4822-4842 PB L 73179	Prism testing apparatus. Drawings. 1941. In German.	2.50
4843-5178 PB L 73179	Large metallographic microscope 1938. Drawings. 1935-1939. In German.	34.00
5179-5190 PB L 73179	Adjustable optical bench. Drawings. 1937. In German.	1.50
5191-5278 PB L 73179	Camera 18 x 18 cm for large metallographic microscope 1938. Drawings 1939. In German.	9.00

PB L 73122. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Parts lists and drawings for telescopic sights and other optical instruments. (FIAT Microfilm Reel I 2, Frames 1284-1701) 1929-1944. 390 f.* Price: Microfilm-$4.75 - Enlargement Print-$39.00
This FIAT microfilm reel consists of parts lists and drawings for telescopic sights, prism telescopes, microscopes and other optical instruments as listed below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $4.75. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German. Considerable number of frames illegible or may not reproduce well.

Frames	Title	Price
1284-1314 PB L 73122	Telescopic gun sight Sfl. Z.F. 2. Parts list and drawings. 1941. In German.	$3.50
1315-1331 PB L 73122	Telescopic gun sight Sfl. Z.F. Parts list and drawings. 1943. In German.	2.00
1332-1368 PB L 73122	Telescopic gun sight Sfl. Z.F. 1a. Parts list and drawings. 1943. In German.	4.00
1369-1435 PB L 73122	Telescopic gun sight Sfl. Z.F. 1. Parts list and drawings. 1941. In German.	7.00
1437-1549 1450-1498 1531-1533 PB L 73122	Telescopic gun sight identified by general number 27-1250. Parts lists and drawings. 1943. This item will not reproduce well. In German.	6.50
1499-1506 PB L 73122	Light anti-aircraft gun sight identified by general number 127-2051. Parts list and drawings. 1944. In German. Some frames may not reproduce well.	1.50
1507-1517 1519-1520 1534-1536 PB L 73122	"Falter." three-lens loupe 10x, f = 5 cm. Drawings. n.d. In German. Many frames hardly legible.	2.00
1518 1521-1530 PB L 73122	Telescope objective f = 25 cm. 1 : 1. Drawings. 1943. In German. Some frames illegible.	1.50
1550-1556 PB L 73122	Infrared device with "Spanner IV." objective, f = 9 cm. 1943. In German. May not reproduce well.	1.50

Photographic and Optical Goods (contd)

1557-1566 PB L 73122 — Binocular microscope. Drawings. 1944. In German. Several frames illegible. 1.50

1567-1583 PB L 73122 — Prism telescopes 5x70, 10x50, 6x42, 8x42, 8x60, 6x30 8x30 and 7x50. Drawings. 1935-1937. In German. 2.00

1584-1598 PB L 73122 — Miniature film camera. Drawings. 1944. In German. 1.50

1599-1603 PB L 73122 — Enlarger for Panphot camera. Drawings. 1935. In German. 1.50

1604 PB L 73122 — Flashlight equipment for Leica camera. Drawing. 1938. In German. 1.50

1605-1606 PB L 73122 — Absorption photometer for biological microscopes. Drawings. 1937. In German. 1.50

1607 PB L 73122 — Monochromator. Drawing. 1935. In German. 1.50

1608-1609 PB L 73122 — Tyndall meter. Drawings. 1934. In German. 1.50

1610 PB L 73122 — Integration stage with six components. Drawing. 1929. In German. 1.50

1611-1612 PB L 73122 — Microphotometer. Drawings. 1939. In German. 1.50

1613-1620 1625-1636 PB L 73122 — Drawing apparatus with a profile projector. Drawings. 1939. In German. Several frames may not reproduce well. 2.00

1621-1624 PB L 73122 — Large plane table. Drawings. 1936. In German. 1.50

1637-1642 1659-1673 PB L 73122 — Comparison microscope. Drawings. 1941. In German. 2.00

1643-1658 PB L 73122 — Microtome. Drawings. 1932. In German. Some frames may not reproduce well. 2.00

1674-1701 PB L 73122 — Dilatometer. Drawings. 1928. In German. Several frames illegible. 3.00

PHYSIOLOGY

PB M 73997. BERLIN, GERMANY. UNIVERSITY. Research papers on physiological subjects. (FIAT Microfilm Reel B 315, Frames 1-57) 1944-1946. 57 f. Price: Microfilm-$1.50 - Enlargement Print-$6.00

This FIAT microfilm reel contains reproductions of proof sheets of research papers intended for publication in the "Archiv f. experimentelle Pathologie." The material was obviously seized in the library of the above university. Individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $1.50. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
1-6 PB M 73997	Sensitive photometric procedure for determining "Hämiglobin" and hemoglobin. By Kiese. 1944. In German.	$1.50
7-16 PB M 73997	Reduction of hemoglobin and metabolism in the red cells. By Kiese and Schwartzkopf. 1944. In German.	1.50
17-21 PB M 73997	The "Hämiglobin" content of normal blood. By Heubner and others. 1945. In German.	1.50
22-24 PB M 73997	Preparation and properties of the "Verdoglobins II." By Kiese. 1946. In German.	1.50
25-28 PB M 73997	The behavior of the blood iron that splits off readily, in carbon monoxide poisoning. By Bloner and Kiese. 1946. In German.	1.50
29-43 PB M 73997	Preparation and properties of "Verdoglobins." By Kiese. 1946. In German.	1.50
44-55 PB M 73997	Catalytic effect of some pigments on the reduction of "Hämiglobin" in red cells. By Kiese and others. 1944. In German.	1.50
56-57 PB M 73997	Reduction of "Hämiglobin": its acceleration by increasing the lactic acid concentration in the blood. By Kiese. 1946. In German.	1.50

PB M 79143. GUYTON, ARTHUR C. Analysis of respiratory patterns in laboratory animals. 1945. 17 p. Price: Microfilm-$1.00 - Photostat-$2.00

Respiratory patterns from mice, cotton rats, hamsters, white rats, guinea pigs, rabbits, monkeys, dogs, and men have been illustrated and analyzed. In general, the respiratory pattern varies little between one species of animals and another except for rate and tidal air. Within any one species of the smaller animals, the respiratory pattern is relatively constant. Formulae based on weight have been derived for tidal air, rate of breathing, inspiratory and expiratory rate of flow, inspiratory and expiratory speed of flow, pressure drop in the trachea, and retention of particles within the nasal passages. In general, the calculated values from these formulae agreed within 20% of those which could be measured. As an example of information which can be gained from respiratory patterns, two experiments on the anesthetization of rabbits with nembutal are presented. The work was carried out at Camp Detrick, Maryland from March 1945 to September 1945.

PB M 79142. GUYTON, ARTHUR C. Measurement of the respiratory volumes of laboratory animals. 1945. 34 p. Price: Microfilm-$1.00 - Photostat-$3.00

The methods of respiratory volume measurements have been reviewed. Several new methods of determining the respiratory volume, including the oscillographic respirograph, have been presented. Data on quiet respiration in eight different animals have been obtained. The data presented indicate that the respiratory volume varies directly neither with the weight of the body nor with the body surface but with the 3/4 power of the weight. A formula has been derived for the determination of respiratory volume of any animal provided the mass is known. Tables, photographs, and bibliography are included. Work was performed at Camp Detrick, Maryland between March 1, 1945 and October 1, 1945.

PB M 78705. JENKINS, DALE W. A laboratory method of rearing chiggers affecting man (acarina; trombiculidae). (CWS Medical Div Rept 104). Feb 1947. 23 p. Price: Microfilm-$1.00 - Photostat-$2.00

Using reptiles (principally Terrapene carolina, the box turtle) as larval hosts and mosquito eggs (Aedes aegypti) as food for the nymphs and adults, the three species of chiggers which affect human beings in the United States (Eutrombicula alfreddugesi, E. masoni and E. batatas (= hominis?) have been reared successfully in the laboratory. Three generations have been reared of the two species first listed. Rearing containers and procedures suitable for the economical handling of large numbers of chiggers have been developed. Overall losses during rearing have been reduced to 30 per cent per generation. Detailed observations have been made on the life histories and reproductive potential of the species employed in the tests. These chiggers were bred in order to provide colonies for the purpose of disease transmission studies of scrub typhus, and to provide chigger larvae for testing new acaricides and repellents. Photographs and bibliography are included.

PB M 77379. MORITZ, ALAN R. and WEISIGER, JAMES R. An experimental investigation of the effects of cold air on the air passages and lungs. Final report. Abstract. Contract OEMcmr-387. (OSRD CWS Clinical Investigation Rept 34) Jun 1944. 1 p. Price: Microfilm-$1.00 - Photostat-$1.00

Experiments on dogs warrant the inference (1) That it is unlikely that significant injury to the air passages of man would result from the breathing of air at any degree of coldness likely to be encountered in non-experimental conditions so long as it were inhaled through the nose or between partially closed lips, and (2) that even though extremely cold air were inhaled rapidly through a widely opened mouth it would be warmed to a point well above freezing by the time it reached the bronchi.

PB M 79155. ROEDER, KENNETH D. and WEIANT, ELIZABETH A. Effect of DDT on sensory and motor structures in the cockroach leg. n. d. 19 p. Price: Microfilm-$1.00 - Photostat-$2.00

Using a method which combined dissection, ablation, electrical stimulation, and recording, it was possible to show that not all structures in the cockroach leg are equally sensitive to the unstabilizing effect of DDT. Single injections of aqueous suspensions containing 0.01 to 10.0 ppm. DDT caused impulse trains to appear in nerves which received fibers from campaniform organs. Excision of the campaniform organs stopped the DDT-induced trains without affecting the normal-appearing discharge from other sense organs (spines and hair sensilla). Observations on the effect of DDT on the electrical activity of neuro-motor preparations and of the cercal nerve confirm the conclusion that the structures in Periplaneta americana most sensitive to the action of DDT are the campaniform sensory cells. Photographs, graphs, and a bibliography are included. The report covers work at Tufts College under an Army Chemical Corps contract.

PB M 67538. SULLIVAN, MAURICE. Survey of work already accomplished. Contract OEMcmr-M701. Apr 1942. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

A report on a study of technics used at Edgewood with a view to certain refinements for greater safety, for better interpretation of data, and correlation of results. The report deals exclusively with the consideration of mustard gas, its mode of application, the pattern and degree of reaction.

PB L 77743. TUFTS COLLEGE. Fatigue tests: The effects of sound on accuracy of azimuth tracking. Contract OEMsr-581, Rept 1. Sep 1942. 36 p. Price: Microfilm-$1.00 - Photostat-$3.00

Experiment was undertaken to determine the effect of sounds of high amplitude upon accuracy of performance in azimuth tracking on a Navy trainer. The sounds were introduced at intervals during tests of four hours. The experiment was designed to determine: (1) the effect of the unannounced first exposure to sound at 120 DB. delivered at the termination of four hours of continuous work; (2) the effect of sound periodically introduced during a four hour test at a sound level of 120 DB.; and (3) the effect of sound at a level of 130 DB. introduced at the middle and at the end of the four hour test period. This report describes the experimental procedure in detail and includes a number of figures.

RUBBER AND RUBBER PRODUCTS

PB L 30875. DAVIS, R. K. Reclaimed rubber "T" connectors. Mines Equipment Company. (AAF Materiel Command Memo Rept EXP-M-54-656-546) Aug 1942. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00

PB L 52018. GERMANY. REICHSAMT FÜR WIRTSCHAFTSAUSBAU. Chemische Berichte Sept. 1942. First meeting of the cooperative group for rubber, June 19, 1942. Sep 1942. 61 p. Price: Microfilm-$2.00 - Photostat-$5.00

For abstract of this report see "Chemicals and Allied Products--Miscellaneous Chemicals," in this issue of the Bibliography.

PB L 78634. GREGORY, J. A study of combinations of neoprene with reclaimed CWS rubber scrap and with ground CWS neoprene scrap. (Mass Institute of Technology Memo Rept 61). Mar 1944. 15 p. Price: Microfilm-$1.00 - Photostat-$1.00

An investigation was made of the possibility of incorporating reclaimed CWS rubber scrap or ground CWS neoprene scrap in neoprene faceblank formulations to extend the limited amount of neoprene available. It was found possible to incorporate up to 45 parts by weight of reclaimed CWS rubber scrap or up to 55 parts by weight of ground CWS neoprene scrap per 100 parts of neoprene for this purpose.

*PB L 79316. NAUNTON, W. J. S. Synthetic rubber. Interrogation of Dr. Bayer and Dr. Roelig of I. G. Farbenindustrie A.G., Leverkusen in U.K. (BIOS Final Rept 1166, Item 22, 31; Interrogation Rept 413). Aug 1946. 37 p. Price: Microfilm-$1.00 - Photostat-$3.00

Dr. Roelig was interviewed concerning the following subjects: Tear resistance, Hoppler thermostat, Dr. Roelig's damping machine, I. G. abrasion machine, compression set and creep, cut growth, flexing, electrical tests, permeability to gases, and aging tests. Some information is given on these. Dr. Bayer was interviewed regarding production of isocyanates, polyester rubbers, coating compositions and adhesives based on di- and polyisocyanates (Desmodurs and Desmophens), and the reactions of acrylonitrile.

* PB L 80574. NIEMANN, GEORG and others. The chemical and technical basis for the synthesis of butadiene at I. G. Ludwigshafen. (FIAT Final report 1008). Apr 1947. 31 p. Price: Mimeo. $1.00

This document consists of a lecture by Dr. Georg Niemann on May 12, 1944. In this lecture the author compares briefly, two butadiene processes based on acetylene: (1) via acetaldehyde by addition of water; and (2) via butynediol from reaction with formaldehyde. Flowsheets of the latter process, which was discovered by Dr. J. W. Reppe, are given. Mention is also made of numerous products that can be made from the main process intermediates and certain side products.

STRUCTURAL ENGINEERING

PB L 70444. BOESS, F. Publications on hydraulic engineering. (FIAT Microfilm Reel AA 220, Frames 1-1358) 1937-1944. 141 f. Price: Microfilm-$2.25 -Enlargement Print-$14.50

This reel was prepared by FIAT investigators in Germany. Individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $2.25. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
1-6 PB L 70444	Hydraulic engineering technique of tests on scale models. Nov 18, 1944. In German.	$1.50
7-29 PB L 70444	Report of experiments for the determination of the torsional moments in a 1 to 10 model of a throttling flap for the "Lech" weir station. Jun 1, 1941. In German.	2.50

Structural Engineering (contd)

30-68 PB L 70444 Reports on the experiments carried out for the pillar power station at "Laufen" and "Eching" (Salzach) river with models on the scale of 1:45. Jan 13, 1944. In German. 4.00

69-98 PB L 70444 Report on the experiments with models, scale 1:20, of a sector weir for the "Magdeburg" weir installation. Aug 7, 1937. In German. 2.50

99-118 PB L 70444 Explanatory report about the sector weir with separating sectors for the "Magdeburg" weir station. Jul 15, 1937. In German. 2.00

119-135B PB L 70444 Evaluation concerning a new type of sector weir for the "Magdeburg" weir station. Jun 20, 1937. By Alfred Eckhardt. In German. 2.50

PB L 70444-S. BOESS, P. Publications on hydraulic engineering. (FIAT Microfilm Reel AA 220, Frames 1-135B, abstract cards) 1937-1944. 12 p. Price: Microfilm-$1.00 - Photostat-$1.00
Brief abstracts of the individual items on the above reel AA 220, PB 70444, prepared by FIAT personnel in Germany.

* PB L 79227. BESSEY, G. E. Cellular concretes and some other insulating building materials in Germany. (BIOS Final Rept 1352, Item 22). n. d. 30 p. Price: Microfilm-$1.00 - Photostat-$2.00
This report deals primarily with an investigation of developments in the various processes of manufacture of cellular concretes in Germany, and with their use. It includes the Porenbeton (hydrogen peroxide) process, the Microporite and Iporit processes, and experimental developments similar to the Swedish "Siporex" aluminium powder process. Factories near Munich and Hamburg, and laboratories near Munich and at Frankfurt were inspected and details of the processes were taken, and a number of buildings in which these materials had been used were examined. Two works making peat insulating slabs and one making fibre insulating board were examined. Developments in regard to insulating building materials generally were discussed with a well-known German authority on the subject. Illustrations and a bibliography are included.

PB L 67742. GERMANY. REICHSLUFTFAHRTMINISTERIUM AND OBERBEFEHLSHABER DER LUFTWAFFE. Model tests on bombproof construction carried out by the Structural Engineering Institute of the Brunswick School of Technology. Nov 1940. 181 p. Price: Microfilm-$4.00 - Photostat-$13.00
This report most of which is in longhand, consists of data tables, graphs, correspondence, and miscellaneous notes. In German.

PB L 74072. PORTLAND ZEMENTWERKE, HEIDELBERG, GERMANY. Reinforced concrete. (FIAT Microfilm Reel CC 237, Frames 1-113.) 1939-1940. 113 F. Price: Microfilm-$2.00 - Enlargement Print-$11.80
This microfilm reel contains copies of two publications on reinforced concrete, both of which are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $2.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
1-71 PB L 74072	"Reinforced concrete" (theory and application; vol. 1 Girders and Plates). 1939. In German.	$7.50
72-113 PB L 74072	"Initial tension in reinforced concrete construction" (reprints from "Beton und Eisen" Nos. 11 and 12, 1940 and "Die Bautechnik", Nos. 22, 23, and 28, 1940. 1940. In German.	4.50

TRANSPORTATION EQUIPMENT

AERONAUTICS

Aircraft

PB L 30899. BAILEY, G. W. Failure of baggage door lock P-43 and P-43A airplane. (AAF Materiel Command Memo Rept U-EXP-M-51-5398) Dec 1941. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00

PB L 30865. BAIRD, R. A., III. Spring, landing gear locking mechanism, latch No. 36-13553--BC-1 airplanes. (AAF Materiel Command Memo Rept U-EXP-M-51-5251) Oct 1941. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00

PB L 30917. COLIN, R. J. Radio noise tests on the Aero Torque windshield wiper. (AAF Materiel Command Memo Rept ENG-54-656-1041) May 1944. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00

PB L 30900. GRANT, D. Malfunctioning of hydraulic pressure regulating valve, assembly No. HC-261, P-43 series airplanes. (AAF Materiel Command Memo Rept U-EXP-M-51-5399) Dec 1941. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

PB L 30901. GRANT, D. Malfunctioning of master brake cylinder assemblies, No. 57424-L and 57425-R - P-43 airplane. (AAF Materiel Command Memo Rept U-EXP-M-51-5456) Feb 1942. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

PB L 30903. HORST, C. O. Use of Keystone No. 76 grease in landing gear control gear box - Beech airplanes. (AAF Materiel Command Memo Rept U-ENG-M-51-5774) Jan 1943. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

PB L 86070. JACKSON, L. R. and others. Survey of available information on the behavior of aircraft materials and structures under repeated load. (OSRD Rept 6600) Dec 1945. 213 f. Price: Microfilm-$6.25 - Enlargement print-$23.00
This advisory report on fatigue properties of aircraft materials and structures was compiled by L. R. Jackson, H. J. Grover and H. C. McMaster of the Batelle Memorial Institute under contract OEMsr-307 of the National Defense Research Committee of the Office of Scientific Research and Development, War Metallurgy Division (Division 18), Serial M 653 and is designated as survey project SP 27. The results of a survey of available information on the fatigue properties of structural materials and of structures used in aircraft are presented. The survey was undertaken by the War Metallurgy Committee at the request of the Materials Research Coordination Committee of the NACA. The information included in the report is based upon published data obtained from the library of the Batelle Memorial Institute and used

unpublished data made available through the courtesy of aircraft manufacturers, of manufacturers of aircraft materials and of various other research laboratories and organizations. The survey has been restricted to the primary load-bearing components of the airframe and landing gear. The particular fatigue problems concerning engines and propellers have not been investigated. Controls, fuel systems, instruments, and various attachments have likewise been omitted from the survey. Available information on several of the materials, most widely used in the airframe and landing gear, have been summarized. Data on the fatigue properties of many structural elements have also been summarized, and gaps in present information have been noted. To further evaluate the fatigue test results available, consideration has been given to the extent and nature of information on those service loads which might cause fatigue failures in the airframe. It is hoped by the authors that this preliminary evaluation of fatigue properties in relation to service conditions may be useful as a broad guide in formulating future research investigations. Bibliography, photographs, graphs, and tables of data.

PB L 80683. LOOK, BONNE C. Flight tests of the thermal ice-prevention equipment on the B-17F airplane. (Natl Advisory Committee for Aeronautics Rept A-23, AR Rept L4B02). Feb. 1944. 63 p. Price: Microfilm-$2.00 - Photostat-$5.00

Performance tests of the thermal ice-prevention equipment, developed for the B-17F airplane, (see PB 80677), have been conducted at the NACA Ice Research Project, Minneapolis, Minn. Temperatures of the heated surfaces, structure, and circulating air and air-flow rate and quantity of heat through the system were obtained during flights in dry air and in natural icing conditions. Observational and photographic data were obtained of the susceptibility of the protected and unprotected areas of the airplane to ice formations and are included in this report together with charts, tables and sketches.

PB L 79076. LOWRY, JOHN G. Adjustment of stick force by a nonlinear aileron-stick linkage. (Natl Advisory Committee for Aeronautics Rept L-467). Nov 1942. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00

Inasmuch as a system that could be determined mathematically rather than by trial and error was desirable, the subject linkage was based on a sine curve. The system is shown schematically in this report in figure I and the derivation of the equations for the system is given in the Appendix. Figure 2 shows the design chart for sine linkage, and figure 3 and 4 show aileron-stick characteristics for sine linkage and the effect of aileron-stick linkage on stick force respectively.

PB L 80834. MARTIN, GLENN L., CO., BALTIMORE, MD. The Martin Mars-transport airplane: A war time contribution to peace-time world commerce. n. d. 39 p. Price: Microfilm-$1.00 - Photostat-$3.00

The brochure describes and illustrates the several interior designs of this basic type all passenger, all cargo and for passenger-cargo long range flying boat.

PB L 79273. MOSKOVITZ, A. I. XC-35 gust research project: Characteristics of vertical drafts and associated vertical-gust velocities within convective-type clouds. (Natl Advisory Committee for Aeronautics Rept L-554, R Bulletin L5A03). Jan 1945. 11 p. Price: Microfilm-$1.00 - Photostat-$1.00

Records obtained in flight were evaluated to determine the relation between the velocities of vertical drafts and associated gusts within convective-type clouds. The velocity of the vertical drafts was evaluated from the variation of altitude with time recorded by a barograph and by motion pictures of the pilot's instrument panel. The draft velocities thus obtained were compared with the maximum true gust velocities in the draft region evaluated from airspeed and acceleration data. A table, a photograph, and a velocity chart are included.

PB L 79283. PHILLIPS, W. H. and NISSEN, J. M. Flight tests of various tail modifications on the Brewster XSBA-1 airplane. I. Measurements of flying qualities with original tail surfaces. (Natl Advisory Committee for Aeronautics Rept L-612, AR Rept 3F07). Jun 1943. 54 p. Price: Microfilm-$2.00 - Photostat-$4.00

A series of flight tests of the Brewster XSBA-1 airplane was conducted to determine the effect of various tail modifications. This present report describes an investigation of flying qualities of the airplane with its original tail surfaces. Photographs, sketches, charts, and graphs are included.

PB L 30904. POLK, B. M. Laboratory tests of Hoof shuttle valves. (AAF Materiel Command Memo Rept EXP-M-51/M 752 Addendum 6) Jan 1942. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00

PB L 30910. QUAILE, VINCENT H. Radio noise tests and recommendations on a Thompson Products fuel booster pump. (AAF Materiel Command Memo Rept EXP-54-656-1139) Aug 1944. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

PB L 79259. RAFEL, NORMAN. Effect of normal pressure on the critical shear stress of curved sheet. (Natl Advisory Committee for Aeronautics Rept L-416). Jan 1943. 12 p. Price: Microfilm-$1.00 - Photostat-$1.00

The upper surface of the wing on an airplane in level flight is subjected to an outward-acting pressure due to the difference in internal and external pressures. In order to determine the effect of this pressure on the critical stresses, an experimental study was undertaken. This present report gives the results of torsion tests on two curved-sheet specimens subjected to an outward-acting normal pressure. An illustration, sketches, and charts are included.

PB L 79097. SILVERSTEIN, ABE and WILSON, HERBERT A., JR. Aerodynamic characteristics of a 4-engine monoplane showing comparison of air-cooled and liquid-cooled engine installations. (Natl Adv Comm for Aeronautics Rept L-471). Jul 1939. 26 p. Price: Microfilm-$1.00 - Photostat-$2.00

An investigation was conducted in the N.A.C.A. full-scale wind tunnel to determine the aerodynamic characteristics of a 1/4-scale model of a 4-engine monoplane when equipped with comparable air-cooled and liquid-cooled engine installations. The tests as described in this report included measurements of the lift, the drag, and the pitching moment coefficients of the model, and of the propulsive efficiency of the engine-propeller installations. Results of comparison of principal aerodynamic characteristics are presented in tabulated form. Photographs, sketches, and 17 graphs are included.

PB L 80761. STOWELL, ELBRIDGE Z. and others. Bending and shear stresses developed by the instantaneous arrest of the root of a cantilever beam with a mass at its tip. (Natl Advisory Committee for Aeronautics Rept L-586; Memo Rept LM30). Nov 1944. 32 p. Price: Microfilm-$1.00 - Photostat-$3.00

A theoretical and experimental investigation has been made of the behavior of a cantilever beam in transverse motion with a mass at its tip when the root is suddenly brought to rest. Equations are given for determining the stresses, the deflection, and the accelerations that arrise in the beam as a result of the impact. This report summarized the results of a theoretical solution given in Appendix A and presents an experimental verification of these results. A numerical example for the calculation of the maximum stresses near the root of the cantilever beam is given in Appendix B. Eleven charts and graphs are included.

Aircraft (contd)

PB L 30902. TRABER, H. K. Goodyear brake assembly - Curtiss Vulcan, type 22B airplane. (AAF Materiel Command Memo Rept U-EXP-M-51-5718) Sep 1942. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00

PB L 30867. WUNDERLICH, O. A. Observation (field artillery) aircraft type specification. (AAF ASTC Eng Div Memo Rept TSEPE-436-571) Jan 1946. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00

Aerodynamics

PB L 79003. NISSEN, JAMES M. and others. Correlation of the drag characteristics of a P-51B airplane obtained from high-speed wind-tunnel and flight tests. (Natl Advisory Committee for Aeronautics Rept A 62, AC Rept 4K02). Feb 1945. 31 p. Price: Microfilm-$1.00 - Photostat-$3.00
In order to obtain a correlation of drag data from wind-tunnel and flight tests at high Mach numbers, a P-51B airplane, with the propeller removed, was tested in flight at Mach numbers up to 0.755, and the results were compared with wind-tunnel tests of a 1/3-scale model of the airplane. A bibliography, diagrams, graphs, and photographs are included.

PB L 39105. RIEGELS, F. and HRAND, M. Flow functions and velocity fields of 3-dimensional expanding volumes and their simple application for determining outline and pressure distribution of rotation symmetrical bodies by means of examples. (Deutsche Luftfahrtforschung UM 3106). May 1944. 43 p. Price: Microfilm-$1.00 - Photostat-$3.00
This is a report of the "Aerodynamische Versuchsanstalt Göttingen - Institut für Theoretische Aerodynamik". Formulas have been developed for flow functions and velocity fields of the point source, and of finite source lines of constant productiveness and of linear and quadratic increasing productiveness. The use of graphs for determining outline, pressure distribution, and field of flow of rotation symmetrical bodies of arbitrary shape is described and illustrated using a laminar fuselage as an example. In German.

PB L 79287. ROGALLO, F. M. and PURSER, PAUL E. Wind-tunnel investigation of a plain aileron with various trailing-edge modifications on a tapered wing. III. Ailerons with simple and spring-linked balancing tabs. (Natl Advisory Committee for Aeronautics Rept L-470) Jan 1943. 28 p. Price: Microfilm-$1.00 - Photostat-$2.00
An investigation was made in the LMAL 7- by 10-foot tunnel of various modifications to the trailing edge of a 0.155-chord plain aileron on a semispan model of the tapered wing of a fighter airplane. The modifications considered in the present report are trailing-edge tabs linked to the aileron in such a way that the tab deflects in the opposite direction from the aileron and reduces the aileron stick forces. Tests were made to determine the effect of the gap at the aileron nose and the effects of tab span and location. A bibliography, diagrams, and graphs are included.

PB L 79281. ROGALLO, F. M. and LOWRY, JOHN G. Wind-tunnel investigation of an NACA full-span high-lift lateral-control combination. I. Section characteristics, NACA 23012 airfoil. (Natl Advisory Committee for Aeronautics Rept L-288). Jul 1942. 30 p. Price: Microfilm-$1.00 - Photostat-$2.00
The ultimate aim of this investigation was to obtain arrangements with high-lift coefficients and adequate lateral control, with a minimum of drag in the high-speed condition, and with a minimum of structural and mechanical difficulties. The high-lift characteristics of an NACA 23012 airfoil with 0.15 C and 0.25 C chord retractable flaps in combination with a plain and with a slotted 0.08 C chord aileron is presented in this report. A list of references, tables, sketches, and charts are included.

PB L 79059. SWANSON, ROBERT S. Jet-boundary corrections to a yawed model in a closed rectangular wind tunnel. (Natl Advisory Committee for Aeronautics Rept L-803). Feb 1943. 32 p. Price: Microfilm-$1.00 - Photostat-$3.00
General formulas are derived for determining the jet-boundary corrections to the angle of attack, the drag coefficient, the downwash, the pitching-, rolling-, and yawing-moment coefficients due to the ailerons on yawed models. Numerical values of the jet-boundary induced velocities and the corresponding corrections are calculated for a typical powered model yawed 20° in a 7- by 10-foot closed wind tunnel. The results of the calculations are compared with the results for the unyawed model. Charts are included.

PB L 79267. SWEBERG, HAROLD H. Full-scale tunnel investigation of the control and stability of a twin-engine monoplane with propellers operating. (Natl Advisory Committee for Aeronautics Rept L-425). Nov 1942. 68 p. Price: Microfilm-$2.00 - Photostat-$5.00
As part of a general investigation directed toward predicting the effects of propeller operation on the stability of various types of aircraft with various power plant arrangements, extensive tests have been conducted in the NACA full-scale wind tunnel with a typical twin-engine tractor monoplane model. This report is concerned with force tests of the model with horisontal tail surfaces removed and force tests of the complete model. The results of these tests are given in this report. Some comparisons of the experimental results with the existing theory of the phencomena involved are also given. Tables, photographs, charts and plotted graphs are included as well as a list of references.

PB L 80766. UNDERWOOD, WILLIAM J. and FULLMER, FELICIEN F., JR. Two-dimensional wind-tunnel investigation of spoiler aileron flap model for the Hughes XF-11 airplane. (Natl Advisory Committee for Aeronautics Rept L-644, Memo Rept L5G29). Apr 1945. 42 p. Price: Microfilm-$1.00 - Photostat-$3.00
This report covers tests made in the Langley two-dimentional low-turbulence tunnel in order to determine the spoiler lead, effectiveness, hinge-moment, and airfoil profile-drag characteristics. Additional tests at a higher Reynolds number to determine the spoiler effectiveness, airfoil profile-drag, and pitching moment are also reported. Tables, charts, photographs, sketches and graphs are included.

PB L 79264. U.S. NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS, FLIGHT RESEARCH LOADS SECTION. AC-35 gust research project: Operation in cumulus congestus cloud on July 31, 1941. Maximum gust intensities. (Rept L-566) Apr 1942. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
A turbulence survey was made with the XC-35 airplane of a large cumulus congestus cloud near Langley Field, Virginia. This report presents a general description of conditions and the maximum gust intensities recorded during the flight. A table, a sketch of the cloud and a graph are included.

PB L 80678. WYATT, DEMARQUIS D. and CONRAD, E. WILLIAM. An investigation of cowl-flap and cowl-outlet designs for the B-29 power-plant installation. (Natl Advisory Committee for Aeronautics Rept E-206, Memo Rept E5K30a). Jan 1946. 39 p. Price: Microfilm-$1.00 - Photostat-$3.00
This report covers an investigation of cowl-flap and cowl-outlet designs for the B-29 power plant installation which was conducted in the Cleveland altitude wind-tunnel to determine the effect of cowling performance, of changes in hinge-flap design details, the use of sliding flaps, and the use of fixed top flaps in combination with hinge flaps. The tests are described and a summary of results given. Sketches, drawings, photographs and charts are included.

PB L 79477. BRAUN, GERHARD W. Damping influence of an aero-jet duct. (AAF T-2 Rept IRE-22). Dec 1945. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00
This report contains information obtained from a German scientist, Dr. Gerhard Braun who was brought to the United States. The report was obtained by the Army Air Forces at Wright Field, Dec. 19, 1945, and describes the propitious location of an aero-jet whereby maximum effect is achieved. Four sketches are included.

PB L 78625. DAMKOEHLER, G. and EGGERSGLUESS, W. A new propellant combination for rockets, using a solid oxygen carrier and ammonia as fuels. (AAF T-2 Translation 1041; ZWB FB 1391). Feb 1947. 51 p.
Price: Microfilm-$2.00 - Photostat-$4.00
A few general remarks dealing with thrust motors are made. A compilation is given of those propellants which are of potential use for self-contained systems. Attention is then drawn to nitrosyl perchlorate ($NOClO_4H_2O$ named "PC2"). This is a solid oxygen carrier which can be vaporized without leaving a residue and has 59.6% available oxygen. The production, properties, and handling of this oxygen carrier are discussed. Data tables, diagrams, and graphs are included.

PB L 79102. DAVIS, WALLACE F. and BROWN, SHERWOOD H. Wind-tunnel investigation of the effect of jet-motor operation on stability. (Natl Advisory Committee for Aeronautics Rept A-31). Jul 1944. 23 p. Price: Microfilm-$1.00 - Photostat-$2.00
The effects of jet-motor operation on the stability and control characteristics of two fighter-type airplanes as determined by wind-tunnel tests of 1/5-scale models are presented. It is shown that the action of the jet is to cause a small loss in stick-fixed stability which is predictable from known theories. A bibliography, diagrams, photographs, and graphs are included.

PB L 80721. DONAR GESELLSCHAFT M.B.H. FÜR APPARATEBAU, WESERMÜNDE, W. Torque motor - rocket operated. Dec 1944. 22 p. Price: Microfilm-$1.00 - Photostat-$2.00
This document contains a letter from the Donar Gesellschaft m. b. H. für Apparatebau, Wesermünde to the German Navy High Command concerning a rocket-operated rotary motor manufactured by the firm and drawings for the motor, sent to the Navy High Command as enclosure with the letter. Model DM-1 uses a black powder propellant charge, and Model DM-2 a diglycol charge. In German.

PB L 79031. PALMER, CARL B. Performance of compressor-turbine jet-propulsion systems. (Natl Adv Comm for Aeronautics Rept L-278, AC Rept L5E17). Jun 1945. 34 p.
Price: Microfilm-$1.00 - Photostat-$3.00
An analysis of the performance of compressor-turbine jet-propulsion systems was carried out by calculating the thrust power from a compressor-turbine jet engine with a systematic variation of pressure ratio, fuel-air ratio, compressor and turbine efficiencies, flight speed, altitude, and maximum gas temperature. A bibliography and graph are included.

PB L 81019. SCHAEFER, K. On the thermodynamics of rocket propulsion, I. (AAF T-2 Translation 982; ZWB UM 847). Feb 1947. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00
An estimate is made of the extent in which dissociation equilibrium is established during the outflow from the thrust nozzle of a rocket drive. It is shown that the establishment of the equilibrium may be assumed for this case, based on the accuracy of temperature determination which is obtainable with the present-day knowledge of calorific data.

MARINE TRANSPORTATION

PB L 80686. DEUTSCHE SCHIFF UND MASCHINENBAU A.G. Destroyers "Z5-8"; Description of the over-all electric installation. Order and repeat-back installation. Part III, vol. 3. (CONLAN 22). Apr 1934. 100 p. Price: Microfilm-$2.00 - Photostat-$7.00
This manual contains description and maintenance instructions for the command and the repeat-back systems on the German destroyers Z5 to 8 inclusive. It covers the engine room order and repeat-back system and the remote revolution indicator systems for the propeller shafts. Transmitter and receiver units are illustrated. Text is in English translation.

PB L 79571. HILLIER, H. and BRADLEY, J. N. German Naval boilers, with particular reference to design, corrosion and boiler feed water treatment. Final report. (BIOS Final Rept 1333, Item 29). n. d. 278 p. Price: Microfilm-$6.00 - Photostat-$19.00
This report deals with corrosion of German Naval boilers, with particular reference to de-aeration of feed water. Subjects covered are: Internal boiler maintenance; boiler tube inspection; specifications for boiler plant material; boiler preservation during manufacture and in service; working instructions for feed water treatment and alkaline protection for boilers; feed water maintenance and alkaline boiler protection; and dosing plants for boiler feed water treatment. A number of sectional drawings showing various boiler installations; graphs; diagrams and sketches are included.

PB L 82234. U. S. BUREAU OF SHIPS. Parts and instruction books for General Motors Diesel engines, Models 16-278A, 12-288, 8-567ATS and 12-567. (Bur Ships, Navy Dept Reel D-6008 (1-6), Frames not numbered) Dec 1944. 1023 f.
Price: Microfilm-$7.00 - Enlargement print-$104.00
This reel, D-6008, contains six sections as listed below. These individual sections are available as enlargement prints at the prices indicated.

Section	Model No.	Description	Contract	Frames and Price
D-6008-1	16-278A	Maintenance Manual for engines with serial numbers 55211 to 55550 inclusive (Reverse gear).	Nobe-1396, Edi 06	160 f. $17.00
D-6008-2	16-278A	Maintenance Manual (Main engines for U. S. submarines) covers engines with serial numbers 55591 to 55618 inclusive.	Nobe-1507, Edi 08	150 f. $16.00
D-6008-3	12-288	Parts list (Seaplane tenders).	Engines #'s 5621-8	239 f. $25.00
D-6008-4	8-567ATS	Parts list. Electrical control equipment. Reverse reduction gear 86-ft steel tugboat.	W-697-Eng-4135 Army Engineers	168 f. $18.00
D-6008-5	12-567	Parts list. Engine #'s 5471-3	Engine #5472	153 f. $17.00

			Nos.59388 YT-134 (WAHNETA)	
D-6008-6	12-567	Parts list.	Engine #5473 Nos. 59388, YT-133 (MARKETAH)	153 f. $17.00

PB L 82235. U. S. BUREAU OF SHIPS. Parts list for General Motors Diesel engine Model 16-278A; DA-WOba 345 and WOba 412. (Bur Ships Navy Dept Reel D-6932, Frames not numbered) 1944. 110 f. Price: Microfilm-$3.50 - Enlargement print-$12.00
This reel includes lists of auxiliary components of manufacturers other than GM and which are applicable to the subject model.

MISCELLANEOUS

PB L 74940. BRAUNSCHWEIG, GERMANY. TECHNISCHE HOCHSCHULE. Dissertations in natural sciences. (FIAT Microfilm Reel W 55, Frames 5883-6550) 1940-1942. 668 f. Price: Microfilm-$6.00 - Enlargement print-$67.00
This reel was prepared by FIAT investigators in Germany. Individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
5883-5945 PB L 74940	Investigations of the steam capacities of Benson marine boilers. By Kurt Illies. 1940. In German.	$6.50
5946-5956 PB L 74940	Measurements of the vibrations of gas columns with steep fronts in pipe lines. By Erich Lettau. 1940. In German.	1.50
5957-6051 PB L 74940	Aminoindandiones. By Udo Walbe. 1942. In German.	9.50
6052-6095 PB L 74940	The composition of emetine. By Hans-Werner Störk. 1942. In German.	4.50
6096-6258 PB L 74940	Investigation of the amount of material needed and the amount of steel saved using free-lying cross wires in reinforced concrete slabs. By Gerhard Sinnigen. 1941. In German.	16.50
6259-6370 PB L 74940	Contribution to the pharmacology of Bowiea volubilis. By Siegfried Rebholz. 1942. In German.	11.50
6371-6550 PB L 74940	Influencial factors and the evaluation of open-air-rusting tests with plain steel and slightly alloyed steel. By Karl-Friedrich Mewes. 1942. In German.	18.00

PB L 74952. BRAUNSCHWEIG, GERMANY. TECHNISCHE HOCHSCHULE. Doctorate theses in natural sciences. (FIAT Microfilm Reel W 53, Frames 4199-5018) 1938-1941. 820 f. Price: Microfilm-$6.00 - Enlargement print-$82.00
This reel was prepared by FIAT investigators in Germany. 14 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
4199-4257 PB L 74952	Measurements on guide vanes of centrifugal pumps. By Heinz Schrader. 1939. In German.	$ 6.00
4258-4299 PB L 74952	Contribution to the knowledge of cod liver oil. By Albert Haessh. 1940. In German.	4.50
4300-4328 PB L 74952	The influence of prestresses on the damping ability of wires. By Karl Lippacher. 1941. In German.	3.00
4329-4352 PB L 74952	Tests for producing a polyploid Mentha piperita by means of colchicine and acenaphthene. By Gerhard Schenk. 1940. In German.	2.50
4353-4389 PB L 74952	Investigation of cod liver oil and cod liver oil preparations. By Ludwig Schneider. 1941. In German.	4.00
4390-4417 PB L 74952	The composition of marrubiin. By Günther Weggen. 1940. In German.	3.00
4418-4437 PB L 74952	Dangers of water pressure resistant packings. By Hans Klippel. 1938. In German.	2.00
4438-4522 PB L 74952	Tests for the synthesis of dl - asarinin. By Wilhelm Bierod. 1941. In German.	8.50
4523-4605 PB L 74952	Synthetic tests in the field of polynuclear ring systems. By Bruno Scheidt. n.d. In German.	8.50
4606-4737 PB L 74952	Rectifier using capacitor discharges with spark free switching device. By Karl Brinkmann. 1941. In German.	13.50
4738-4812 PB L 74952	Newtonian approximation method for general equation systems. By Karl Bussmann. 1940. In German.	7.50
4813-4881 PB L 74952	Temperature damages in concrete. By Bruno Hampe. 1940. In German.	7.00
4882-4917 PB L 74952	The thermal dissociation of gaseous hydrogen sulfide. By Viktor Klock. 1941. In German.	4.00
4918-5018. PB L 74952	A coordinate oscillograph for indicating AC hysteresis loops. By Otto Possner. 1940. In German.	11.50

PB L 74936. BRAUNSCHWEIG, GERMANY. TECHNISCHE HOCHSCHULE. Dissertations in natural sciences. (FIAT Microfilm Reel W-54, Frames 5019-5882). 1938-1942. 863 f. Price: Microfilm-$6.00 - Enlargement Print-$86.50
This reel was prepared by FIAT investigators in Germany. 18 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
5019-5125 PB L 74936	Pharmacognostical investigations on Verbenaceae. By Kurt Breitwieser. 1942. In German.	$ 1.50
5126-5133 PB L 74936	Heat transmission during condensation with a turbulent water film. By Ulrich Grigull. 1942. In German.	1.50
5134-5263 PB L 74936	The dielectric strength of motionless and of flowing compressed gases with particular consideration of the interferences occurring in such cases. By Hans Grüne. 1942. In German.	13.00
5264-5321 PB L 74936	A contribution to the investigation of the ingredients contained in the Asclepiadaceae, Marsdenia condurango and Hoya carnosa. By Werner Haselbeck. 1942. In German.	6.00
5322-5405 PB L 74936	The intramolecular hydrogen bridges in the resorcin nucleus, and the synthesis of oreoselone. By Heinz Hoffmann. 1942. In German.	8.50
5406-5510 PB L 74936	Investigations on expansion hygrometry. By Bao-Lin. Jan 1942. In German.	11.50

Miscellaneous (contd)

5511-5577 PB L 74936 — A contribution to the problem of changes in materials under repeated stress. By Alfred Karius. 1942. In German. 7.00

5578-5667 PB L 74936 — Flame-hardening of cast iron of various qualities, particularly considering the cementation due to the graphite in the cast iron, and the heat stability of the hardness structure. By Helmut Killing. 1942. In German. 9.00

5668-5678 PB L 74936 — Model experiments with rectifier bottoms. By Helmut Linde. 1938. In German. 1.50

5679-5695 PB L 74936 — A contribution to the problem of cold welding of alloyed and non-alloyed cast iron of different qualities. By Gottfried Arnold. 1940. In German. 2.00

5696-5704 PB L 74936 — The principles of modulation by varying the load circuit (absorption modulation) and its application to decimeter waves. By Kurt Lambert. 1940. In German. 1.50

5705-5730 PB L 74936 — A contribution to the knowledge of iron compounds. By Karl-Heinrich Maier. 1940. In German. 3.00

5731-5782 PB L 74936 — The reactions at the bases of electric arcs. By Hans-Joachim Schmiedel. 1940. In German. 5.50

5783-5794 PB L 74936 — A contribution to the evaluation of the quenching-bending test. By Ewald Schumann. 1939. In German. 1.50

5795-5810 PB L 74936 — The influence of preliminary annealing, of patenting temperatures, and the surface decarbonization in the properties of steel wire. By Walter E. Wagenknecht. 1940. In German. 2.00

5811-5844 PB L 74936 — Wattless power rectifier. By Christian Frege. 1941. In German. 3.50

5845-5857 PB L 74936 — The oscillation properties of quartz pressure instruments. By Werner Gohlke. 1941. In German. 1.50

5858-5882 PB L 74936 — The influence of vanadium, molybdenum, silicon and carbon upon the strength properties, particularly the fatigue strength of tempered steel. By Werner Holtmann. 1941. In German. 2.50

PB L 28587. BRITISH INTELLIGENCE OBJECTIVES SUB-COMMITTEE. Preliminary reports list No. 199. Dec 1945. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00
Includes BIOS interim investigation reports No. 663-668, 677-678, 680-681, 679.

PB L 28586. BRITISH INTELLIGENCE OBJECTIVES SUB-COMMITTEE. Preliminary reports list No. 207. Jan-Feb 1946. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00
Includes BIOS interim investigation reports No. 30A-2/38, 942, 725-726, 940-941, 969, 967, 968, 721-722, 727-728, 884, 30C-2/2.

PB L 28585. BRITISH INTELLIGENCE OBJECTIVES SUB-COMMITTEE. Preliminary reports list No. 211. Dec 1945-Feb 1946. 11 p. Price: Microfilm-$1.00 - Photostat-$1.00
Includes BIOS interim investigation reports No. 469, 471, 472, 615, 751, 753, 858, 860, 930, 931, 943, 944.

PB L 28584. BRITISH INTELLIGENCE OBJECTIVES SUB-COMMITTEE. Preliminary reports list No. 213. Mar 1945-Feb 1946. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00
Includes BIOS interim investigation reports No. 879, 880, 878, 639, 642, 645, 948, 648, 972, 973, 387, 610.

PB L 28583. BRITISH INTELLIGENCE OBJECTIVE SUB-COMMITTEE. Preliminary reports list No. 263. Feb-Mar 1946. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00 (Limited mimeo supply 25¢).
Includes BIOS interim investigation reports No. 999, 1010, 991, 992, 30A-13/8, 30A-13/6, 30A-13/7, 30A-5/1, 30C-2/4, 30C-2/6, 30C-2/7, 30C-2/3.

PB L 28582. BRITISH INTELLIGENCE OBJECTIVE SUB-COMMITTEE. Preliminary reports list No. 264. Feb-Mar 1946. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00 (Limited mimeo supply 25¢).
Includes BIOS interim investigation reports No. 22E-22/8, 22E-22/13, 22E-24/1, 22E-24/2, 22E-25/1, 22E-25/2, 22K-4/2, 22K-14/3, 22K-7/13, 22K-18/13, 22K-18/14, 22L-24/2, 22L-24/3.

PB L 28581. BRITISH INTELLIGENCE OBJECTIVE SUB-COMMITTEE. Preliminary reports list No. 265. Dec 1945-Mar 1946. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
Includes BIOS interim investigation reports No. G 117A, G 119A, Q 52B, T 11A, P 670, T 1A, Q 87A, Q 73A, P 53A, P 30A, P 25A, Q 21A, Q 89A, P 86B, Q 8E, 696.

PB L 28588. BRITISH INTELLIGENCE OBJECTIVES SUB-COMMITTEE. Preliminary reports list No. 266. Apr 1945-Jan 1946. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00
Includes BIOS reports No. 4610-4628.

PB L 74400. DEUTSCHES MUSEUM, MUNICH, GERMANY. Annual business reports and publications in natural sciences. (FIAT Microfilm Reel G 179, Frames 8335-9116) 1939-1943. 782 f. Price: Microfilm-$6.00 - Enlargement Print-$78.50
This reel was prepared by FIAT investigators in Germany. Individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
8335-8341 PB L 74400	Report 31-32 of the "Senckenberg" Library at Frankfurt am Main. By Walter Rauschenberger. 1939. In German.	$1.50
8342-8375 PB L 74400	Yearly business reports of the "Braunkohlenstiftung an der Bergakademie Freiberg." 1939-1943. In German.	3.50
8376-8386 PB L 74400	Annual business report of the "Mansfeld A.G. für Bergbau und Hüttenbetrieb." 1939. In German.	1.50
	The "Naturforschende Gesellschaft in Bamberg." 1939.	
8387-8394 PB L 74400	The XVIIIth society report of 1939. By E. Zinner. In German.	1.50
8394-8493 PB L 74400	The oldest wheel clocks and modern sun dials. By E. Zinner. In German.	10.00
	"Natur und Volk" A periodical of the "Senckenbergische Naturforschende Gesellschaft, Frankfurt am Main."	
8494-8850 PB L 74400	Vol 69, No. 1-12. 1817-1937. In German. Published 1939.	36.00

Miscellaneous (contd)

8851-9116 PB L 74400 — Vol. 70, No. 1-9. 1817-1940. In German. Published 1940. 27.00

PB L 74860. ERLANGEN, GERMANY, UNIVERSITY. Dissertations in various fields of technology. (FIAT Microfilm Reel F 120, Frames 5482-6191) 1939-1940. 469 f. Price: Microfilm-$5.50 - Enlargement print-$47.00.
This reel was prepared by FIAT investigations in Germany. Individual items are listed below and will be available as enlargement prints. The entire reel may be purchased in microfilm form for $5.50. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
5482-5508 PB L 74860	The "UV" absorption of olive oil. By Tsung-Yi Chao. 1939. In German.	$ 3.00
5509-5557 PB L 74860	Applicability of the symmetrical components in the field of selective safety technic of electric power transmission lines. By Shih Chen. 1940. In German.	5.00
5558-5584 PB L 74860	Investigating the effects of vibration on the human organism. By Rolf Coermann. 1939. In German.	3.00
5585-5595 PB L 74860	The evaporation coefficient of polar crystals. By Virgil Costeanu. 1939. In German.	1.50
5596-5562 PB L 74860	These frames are missing.	
5563-5687 PB L 74860	The chemical behavior of alkali nitrates used in technical salt solutions at temperatures above 460°C. By Werner Degenhard. 1939. In German.	2.50
5688-5712 PB L 74860	The psycho-technical teaching methods for aptitude testing, instruction and vocational training of the "Deutsche Reichsbahn." By Josef Dilger. 1939. In German.	2.50
5713-5795 PB L 74860	Steel frame windows in the construction industry. By Hermann Rupprecht Dürr. 1940. In German.	8.50
5796-5837 PB L 74860	These frames are missing.	
5838-5856 PB L 74860	The internal inherent stress value functions of square plates. By Johann Fadle. 1940. In German.	2.00
5857-5874 PB L 74860	Investigations on stabilized electric arcs in nitrogen and carbonic acid at a pressure from 1 to 40 atm. By Rudolf Foitzik. 1940. In German.	2.00
5875-5884 PB L 74860	Investigating sound conduction in pipes filled with water. By Eugen Ganitta. 1940. In German.	1.50
5885-6016 PB L 74860	These frames are missing.	
6017-6051 PB L 74860	Sanitary porcelain. By Kurt Heinstein. 1939. In German.	3.50
6052-6073 PB L 74860	Optical investigations in a special inhomogeneous medium. By Ernst von Hydebrand und der Lasa. 1940. In German.	2.50
6074-6101 PB L 74860	Measuring projectile velocities by means of a relaxation oscillator controlled by photocells. By Ho, Zah-wei. 1940. In German.	3.00
6102-6126 PB L 74860	Nitrocellulose. By Michail Kassaroff. 1940. In German.	2.50
6127-6191 PB L 74860	Electrically operated vehicles in the German power economy. By Hans Katelhohn. 1940. In German.	6.50

PB L 18231-S. GERMANY. REICHSFORSCHUNGSRAT. Administrative correspondence on research projects. 1943-1945. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
This file lists various administrative correspondence relating to Alsos Mission Reichsforschungsrat 708, v. 1, p. 1594, this Bibliography.

PB L 23441. GLENNON, J. B. Safety of divers during detonation of large explosive charges in vicinity of Smith Point, Va. - Instructions for. (Naval Ordnance Laboratory Memo 2668) Nov 1942. 2 p. Price: Microfilm-50¢ - Photostat-$1.00

*PB L 79490. HUDSON, S. G. and others. German gelatin and hide glue industry. (BIOS Final Rept 1212, Item 22, 31). May 1946. 63 p. Price: Microfilm-$2.00 - Photostat-$5.00
The report covers the production of photographic and high grade gelatins, the production of ossein from bones, and the recovery of calcium phosphate - the plants visited probably representing almost the entire output of these types in the Allied zones of occupation. The production of lower grades of technical gelatin was not adequately covered, however, due to time limitations and shortages of hide fleshings. No new types of raw materials or uses for the finished products appear to have arisen out of wartime conditions. It was significant that all the producers of high class gelatins visited manufactured their own ossein, and the stocks of home produced bone, although small, appeared to be of excellent quality. The processes of manufacture and presentation of the final products were very much on the lines employed in Britain. In general, quality of the finished product was the main consideration, and savings in production costs appear to be of secondary importance. There was nothing really new in plant design or materials of construction - in some cases the impression being given that very little attention had been given to the latter. Attention is drawn however, to a number of outstanding efforts in handling and plant design, which are described in the separate factory reports. Drawings and photographs illustrate the report.

PB L 80732. PUISSEGUR, C. Luminous living organisms. (David W. Taylor Model Basin Translation 221). May 1947. 18 p. Price: Mimeo-$0.75
This is a translation by R. Widmer of an article which appeared in "Science et Vie," Paris, Sep 1946. It is a general survey of the knowledge available on these organisms, with photographs and other illustrations.

PB L 73945. VOITH, J. M., HEIDENHEIM. Experimental and theoretical study for the design of new types of roof-shaped weirs. (FIAT Microfilm Reel AA-240, Frames 1-167). Nov 1943. 167 f. Price: Microfilm-$2.50 - Enlargement Print-$17.00
The hydrodynamic principles and theory involved in the design of weirs is first treated in this discussion. Experiments conducted along the lines of new shapes for weirs are described in detail with many tables, sketches, graphs, drawings and illustrations. In German.

PB L 28589. YOUNG, J. and TONGUE, R. G. Hoffman's Starkefabrik A. G., Bad Salzuflen. (BIOS Evaluation Rept 530) Apr 1946. 1 p. Price: Microfilm-$1.00 - Photostat-$1.00

REGISTER OF PATENTS AVAILABLE FOR LICENSING OR SALE

Information on the following patents can be obtained from the U. S. Patent Office, Washington 25, D. C.

The "Groups" appearing after the patent abstracts are based on the Standard Industrial Classification Manual, Vol. 1, Manufacturing Industries, Executive Office of the President, Bureau of the Budget.

Official Gazette, November 11, 1947.

Swift & Company and its subsidiaries have placed 443 of their patents on the Register of Patents as available for license at reasonable royalty. Abstracts of these patents will be published in groups each week beginning November 4, 1947. These patents cover adhesives, glue and gelatin; beef, lamb, and veal; butchering and slaughtering; casings; dairy and poultry; fats and oils; ham, bacon, and fresh pork; plant food; refrigerator cars and motor vehicles; sausage and table ready meats; soap, glycerine and cleansers; plus one group of miscellaneous patents. Detailed information concerning the patents may be obtained from Swift & Co., Union Stock Yards, Chicago, Ill.

Butchering and Slaughtering

PAT. 2,002,755. Stunning tongs. Patented May 28, 1935.
A stunning instrument comprising a pair of stunning tongs having contact electrodes and means for ejecting a small stream of brine beneath the electrode at the time of contact. Groups 20-11; 36-12. Reg. No. 8,478.

PAT. 2,025,124. Stunning pen. Patented Dec. 24, 1935.
A stunning pen for restraining hogs for electrical stunning, comprising a floor in two sections, one of which sections is adapted to be moved vertically to break the continuity of the floor. Group 35-51. Reg. No. 8,479.

PAT. 2,155,708. Motor. Patented Apr. 25, 1939.
An improved motor for use with a skinning knife comprising a rotor rigidly secured to a shaft and rotatably driven by compressed air delivered through a series of spaced jets. Group 35-51. Reg. No. 8,480.

PAT. 2,155,710. Tongue protector. Patented Apr. 25, 1939.
A tongue protector comprising a guard interposed between the teeth and the tip of the tongue and a device to hold the tongue protector in the cranial cavity. Group 35-51. Reg. No. 8,481.

PAT. 2,155,743. Tongue protector. Patented Apr. 25, 1939.
A tongue protector comprising a frusto-conical guard provided with means for engaging the frenum linguae. Group 35-51. Reg. No. 8,482.

PAT. 2,156,771. Hog head conveyor. Patented May 2, 1939.
A hog head conveyor comprising a conveying means provided with a series of spaced pins pivotally mounted for movement sidewise of the normal line of travel of the conveying means, and guide means for moving the pins through a series of positions adapted for trimming the heads. Group 35-51. Reg. No. 8,483.

PAT. 2,168,703. Skinning knife. Patented Aug. 8, 1939.
A skinning knife having a pair of knife blades provided with serrated cutting edges slidably mounted in parallel abutting relationship, and power driven cam means for reciprocating the knife blades in opposite movement. Group 35-51. Reg. No. 8,484.

PAT. 2,168,708. Carcass tongue protector. Patented Aug. 8, 1939.
A tongue protector comprising a resilient plate adapted to contract when pressure is applied thereto and means for holding the protector in functional relation with the tongue of a carcass. Group 35-51. Reg. No. 8,485.

PAT. 2,168,709. Tongue protector. Patented Aug. 8, 1939.
A protector for the tongue of an animal carcass during dehairing comprising a guard adapted to clamp the folded tongue tip and provided with means for engaging the frenum linguae. Group 35-51. Reg. No. 8,486.

PAT. 2,168,716. Tongue protector. Patented Aug. 8, 1939.
A tongue protector comprising a sheath and resilient arm for holding the sheath in position in the mouth of the carcass. Group 35-51. Reg. No. 8,487.

PAT. 2,168,728. Tongue protector and extractor therefor. Patented Aug. 8, 1939.
A tongue protector adapted to envelop the tongue and a hook member to fasten the protector to the roof of the mouth. Group 35-51. Reg. No. 8,488.

PAT. 2,168,731. Animal carcass tongue protector. Patented Aug. 8, 1939.
A sheath for encasing the tongue of an animal carcass and expansible anchoring arms for holding the sheath in the mouth. Group 35-51. Reg. No. 8,489.

PAT. 2,185,949. Hog stunning pen. Patented Jan 2, 1940.
A V-shaped conveying means comprising spaced, oppositely disposed endless conveyors for supporting live animals in an upright position for stunning while being conveyed to the shackling pen. Group 35-51-62. Reg. No. 8,490.

PAT. 2,220,680. Head puller. Patented Nov. 5, 1940.
A device for severing heads from animal carcasses comprising a lever having means at one end for engaging the top of the carcass head and means intermediate the ends for engaging the upper jaw of the carcass. Group 35-51. Reg. No. 8,491.

PAT. 2,292,319. Skinning machine. Patented Aug. 4, 1942.
A machine for removing the skins from bacon slabs which comprises a revolving drum containing a jaw to grip an edge of the skin while the slab is pulled over a knife to sever the skin from the bacon. Group 35-51. Reg. No. 8,492.

PAT. 2,327,167. Carcass saw. Patented Aug. 17, 1943.
A power operated saw for splitting carcasses, including a frame and pivoted saw and guide means to control the direction of the saw. Group 35-51. Reg. No. 8,493.

Casings

PAT. 1,855,011. Grading device. Patented Apr. 19, 1932.
A casing grading device comprising a base plate and a plurality of vertically extending members grouped in pairs in such manner that the members of each pair are separated from one another to form gauge openings of different sizes and means for guiding water filled casings therethrough. Groups 20-14; 35-51. Reg. No. 8,494.

PAT. 1,855,925. Method of cleaning animal intestines. Patented Apr. 26, 1932.
Animal casings are cleaned by squeezing out the contents while the casings still retain animal heat, soaking in water and stripping the casings a plurality of times, each soaking being in a different body of water, and then immediately cleaning the casings before bacterial fermentation. Group 20-14. Reg. No. 8,495.

PAT. 1,859,291. Casing measuring machine. Patented May 24, 1932.
A casing reel provided with an indicator whereby hanks having the same amount of casings may be formed. Groups 20-14; 35-51. Reg. No. 8,496.

PAT. 1,860,335. Method of curing casings. Patented May 24, 1932.
A method of curing casings which comprises slushing the casings in salt, removing excess salt, and packing the casings in dry storage for further curing. Group 20-14. Reg. No. 8,497.

PAT. 1,913,829. Power driven casing measuring machine. Patented June 13, 1933.
A machine for the automatic measuring the the length of casings including calibrated measuring wheels and automatic means for stopping the wheels when the desired length has been measured. Group 35-51. Reg. No. 8,498.

PAT. 1,967,763. Winding drum. Patented July 24, 1934.
A collapsible winding drum to be used in combination with equipment for the automatic measuring of casings. Group 35-51. Reg. No. 8,499.

PAT. 2,064,148. Sausage and casing therefor. Patented Sept. 15, 1936.
A method of marking animal casings which comprises affixing thereon with a protein precipitant in a marking ink, a marking which is waterproof, smokeproof and opaque. Group 20-14. Reg. No. 8,500.

PAT. 2,063,279. Casing treatment. Patented Dec. 8, 1936.
A method of treating natural casings which comprises treating the casing with formaldehyde, coating the surface with cellulose viscose and regenerating the cellulose viscose. Group 20-14. Reg. No. 8,501.

PAT. 2,083,969. Means for forming laminated tubes from web material. Patented June 15, 1937.
An apparatus for forming laminated tubular casings from web material in a continuous manner. Group 35-51. Reg. No. 8,502.

PAT. 2,084,418. Press inking device. Patented June 22, 1937.
A device for uniformly introducing a supplementary fluid, such as formaldehyde, into the ink supply of a printing press. Group 35-51. Reg. No. 8,503.

PAT. 2,104,450. Casing conveyor. Patented Jan. 4, 1938.
An improved conveying means whereby individual lengths of casings, or groups of casings, may be conveyed through cleaning devices in such a manner as to minimize damage, and to evenly clean the casings. Groups 20-14; 35-51. Reg. No. 8,504.

PAT. 2,119,729. Printing natural sausage casings. Patented June 7, 1938.
A method of treating natural casings, which comprises coating the outer surface with cellulose viscose, and regenerating substantially pure cellulose from the cellulose viscose. Groups 20-14; 35-55. Reg. No. 8,505.

PAT. 2,137,903. Sewing casings. Patented Nov. 22, 1938.
The method of inserting one casing within another which comprises hydraulically conveying one casing within the other. Group 35-51. Reg. No. 8,506.

PAT. 2,137,904. Casing material. Patented Nov. 22, 1938.

The method of preparing sausage casings, which comprises preparing a fabric tube from closely woven fabric, such as muslin, then chemically weakening the fibers of the fabric, as for example by a warm solution of sodium hydrochloride. Group 22-11. Reg. No. 8,507.

PAT. 2,140,156. Tying device. Patented Dec. 13, 1938.
A method and means for measuring and cutting tie strings for casings. Group 35-41. Reg. No. 8,508.

PAT. 2,140,166. Treatment of sausages. Patented Dec. 13, 1938.
A method of tendering casings on sausages, which comprises mechanically partially rupturing the tissue of the casing membrane by treatment with an expansible fluid, such as steam. Group 20-11. Reg. No. 8,509.

PAT. 2,148,550. Printing device. Patented Feb. 28, 1939.
An improved printing device for tubular articles, such as sausage casings, having a rotatable printing roller, means for applying ink to the roller and means to stretch the inner wall of the article at the point of contact with the roller. Group 35-55. Reg. No. 8,510.

PAT. 2,148,884. Method for forming synthetic sausage casings. Patented Feb. 28, 1939.
A method for forming synthetic sausage casings from sheet cellulose material by bonding laminated sheets of cellulose material together with adhesive to form a seamed tube. Group 28-83. Reg. No. 8,511.

PAT. 2,148,885. Drying casings. Patented Feb. 28, 1939.
A method of preparing natural casings for printing, by introducing air into the length of casing closed at one end, and maintaining the casing under constant internal air pressure until dried. Group 20-14. Reg. No. 8,512.

PAT. 2,156,758. Inking device. Patented May 2, 1939.
A casing printing device, having improved ink feeding means for supplying ink to the printing roller. Group 35-55. Reg. No. 8,513.

PAT. 2,182,188. Laminated sausage casing. Patented Dec. 5, 1939.
An artificial sausage casing comprising a layer of fabric, layer of regenerated cellulose, and an intermediate layer of regenerated viscose cellulose. Groups 20-14; 28-83. Reg. No. 8,514.

PAT. 2,200,974. Ink. Patented May 14, 1940.
An improved ink, capable of withstanding wetting and processing conditions, having incorporated therein a small amount of formaldehyde. Group 28-99. Reg. No. 8,515.

PAT. 2,231,954. Casing treatment. Patented Feb. 18, 1941.
A method of reversing a tubular casing, comprising securing a relatively short end strip of the casing against a support, threading the remainder of the casing over the secured end strip of the support and hydraulically reversing the secured end strip. Group 35-51. Reg. No. 8,516.

PAT. 2,239,199. Casing machine. Patented Apr. 22, 1941.
A casing cleaning device comprising a series of machines for cleaning of casings, which machines are operatively linked by conveyor belts for the mechanical conveyance of the casings therebetween. Group 35-51. Reg. No. 8,517.

PAT. 2,260,244. Casing drying means. Patented Oct. 21, 1941.
An apparatus for drying natural casings for printing, having a source of constant air pressure during the drying period to compensate for loss of air through small openings in the casing wall, and means for securing the casings over the nozzles through which the air is introduced. Group 35-51. Reg. No. 8,518.

PAT. 2,375,155. Sewing machine. Patented May 1, 1945.
A machine for sewing wet, fresh, natural casings. Group 35-83. Reg. No. 8,519.

PAT. 2,380,912. Sewing machine. Patented July 31, 1945.
In a sewing machine for casings a special resilient base plate and a presser foot. Group 35-83. Reg. No. 8,520.

PAT. 2,389,112. Sewing machine. Patented Nov. 13, 1945.
An improvement in stitch mechanism of a casing sewing machine. Group 35-83. Reg. No. 8,521.

Dairy and Poultry

RE. 22,858. Method of manufacturing ice cream and the product thereof. Reissued Mar. 25, 1947. Original No. 2,065,398, dated December 22, 1936.
The texture and overrun of ice cream is controlled by adding a small percentage of glyceryl ester of a higher fatty acid having a free glyceryl alcohol group. Group 20-24. Reg. No. 8,522.

PAT. 1,846,754. Means for separating the whites from the yolks of eggs. Patented Feb. 23, 1932.
A device for separating whites from yolks of eggs comprising a slotted trough wherein the yolks of eggs flow over the slot while the whites are separated from the yolks by falling through the slots and both are then collected. Group 35-51. Reg. No. 8,523.

PAT. 1,852,259. New food product. Patented Apr. 5, 1932.
A new food product having incorporated therewith emulsified fried bacon fat having as a base such products as cheese, caramelized and hydrolyzed milk. Group 20-99. Reg. No. 8,524.

PAT. 1,868,336. Egg separator. Patented July 19, 1932.
A receptacle provided with a trap to collect egg whites, which when filled overflows into the receptacle to prevent introduction of foreign matter into the egg white. Group 35-51. Reg. No. 8,525.

PAT. 1,875,496. Egg breaking and packing table. Patented Sept. 6, 1932.
An apparatus for the breaking and packing of whole eggs comprising a plurality of egg breaking stations, means for conveying the egg material in receptacles past the breaking stations and a trough for conveying the broken eggs to the discharge end of the conveyor. Group 35-51. Reg. No. 8,526.

PAT. 1,878,294. Egg separator. Patented Sept. 20, 1932.
A trough having a longitudinal slot for separating whites from yolks, the trough for the whites being integral with one side of the upper trough to eliminate splashing of the whites and the consequent clouding. Group 35-51. Reg. No. 8,527.

PAT. 1,887,516. Means for separating and packing eggs. Patented Nov. 15, 1932.
A device for breaking eggs including a long table with breakers at one end and separators at the other end and a continuous conveyor to carry the product from the breakers to the separators. Group 35-51. Reg. No. 8,528.

PAT. 1,892,539. Method and means for separating egg whites. Patented Dec. 27, 1932.
An egg separator consisting of a pan provided with a baffle plate so disposed that the fluid egg whites entering the trap pass under the baffle plate and over into the storage receptacles by means of an appropriate elevated spillway. Group 35-51. Reg. No. 8,529.

PAT. 1,901,705. Egg tray. Patented Mar. 14, 1933.
Individual cup containers for conveniently conveying contents of eggs from egg breakers to egg separators. Group 35-51. Reg. No. 8,530.

PAT. 1,919,502. Method of neutralizing butterfat. Patented July 25, 1933.
Butter is washed with sodium phosphate to neutralize the acid of rancidity. Group 20-25. Reg. No. 8,531.

PAT. 1,925,406. Egg breaker. Patented Sept. 5, 1933.
An egg breaker including means for holding the egg motionless while the breaking elements, such as a knife, strike it. Group 35-51. Reg. No. 8,532.

PAT. 1,928,715. Egg stamp. Patented Oct. 3, 1933.
A device for stamping eggs including branding elements yieldably and independently mounted to care for irregularities in size and shape of the eggs. Group 35-51. Reg. No. 8,533.

PAT. 1,934,915. Egg breakers' table. Patented Nov. 14, 1933.
A triangular egg breakers' table on which may be mounted three egg breaking platforms and a single egg separating slide whereby a plurality of egg breakers may work on a single slide. Shells are disposed through an opening at the center of the table. Group 35-51. Reg. No. 8,534.

PAT. 1,941,954. Egg packing. Patented Jan. 2, 1934.
A device comprising a long narrow cup retaining rack with partitions and flanges forming a box to hold individual cups into which the eggs are broken for inspection. All cups which pass inspection may be dumped in one operation by manually tipping the rack. Group 35-51. Reg. No. 8,535.

PAT. 1,943,587. Butter packing. Patented Jan. 16, 1934.
A cake of butter subdivided into chips for individual service, and separators interposed between the chips to facilitate separation when required, the separators being waxed on one side and unwaxed on the other side. Group 26-32. Reg. No. 8,536.

PAT. 1,975,196. Singeing method and means. Patented Oct. 2, 1934.
A method of singeing a poultry carcass which consists in first removing the feathers, suspending the poultry carcass from an overhead conveyer and then subjecting the carcass to the action of a fixed flame by causing the carcass to pass through the flame rotatably. Group 35-51. Reg. No. 8,537.

PAT. 1,976,412. Treatment of poultry. Patented Oct. 9, 1934.
A method of defeathering poultry which comprises applying an oleaginous substance to the skin, thereafter applying a depilating wax and removing feathers with the wax. Group 28-31-32. Reg. No. 8,538.

PAT. 1,993,621. Method of preparing meat cheese loaf. Patented Mar. 5, 1935.
A method of preparing a meat cheese product which comprised forming grooves in the surfaces of the body of meat, drying the surface of the meat and thereafter covering the body of meat with a plastic cheese body and adapted to conform to the grooved surface of the meat and adhere to the meat in the form of a layer. Group 20-13-22. Reg. No. 8,539.

PAT. 2,009,238. Low temperature emulsification of cheese. Patented July 23, 1935.
Cheese is subjected to low temperature emulsification under very high vacuum whereby the incorporation of air into the cheese is prevented and the resultant product has better keeping properties. Group 20-22.

Reg. No. 8,540.

PAT. 2,017,648. Defeathering compound. Patented Oct. 15, 1935.
A defeathering compound including Burgundy pitch, Montan wax and paraffin. Group 29-11. Reg. No. 8,541.

PAT. 2,029,811. Cover retaining means. Patented Feb. 4, 1936.
Means for retaining the cover on a butter tub in which a perforated hoop, affixed to the cover, is held to perforations in the next hoop below, or to studs on the wide wall of the tub by wires threaded through the perforations in the skirt of the cover hoop.
Group 25-25. Reg. No. 8,542.

PAT. 2,043,371. Strainer. Patented June 9, 1936.
A cream filtering device comprising an endless fine mesh filter screen mounted upon rollers, means for feeding fluid to said screen, means for holding fluid within the zone of filtration, and removing excess fluid from said screen, means to catch fluid passing through said screen, and separate means to catch fluid squeezed from said screen by said fluid hold means.
Group 35-51. Reg. No. 8,543.

PAT. 2,043,372. Method of treating eggs. Patented June 9, 1936.
A method of treating eggs which consists in passing the egg material, under pressure, sealed from the atmosphere, through cutting elements, positioned transversely to the line of flow of the egg material and adapted to comminute the membranous material.
Group 35-51. Reg. No. 8,544.

PAT. 2,060,557. Mixing device. Patented Nov. 10, 1936.
A device for mixing steam and cream in high temperature deodorization including a water jacketed needle point valve connected with a Venturi passage.
Group 35-51. Reg. No. 8,545.

PAT. 2,084,370. Thermometer guard. Patented June 22, 1937.
A milk bath thermometer, particularly adapted for cheese fats, comprising a float, a guard member for the lower end of the thermometer and means, such as rods, for connecting the guard member to the float. Group 39-11. Reg. No. 8,546.

PAT. 2,084,894. Deodorizer. Patented June 22, 1937.
A deodorizer for milk and cream having a baffle plate against which incoming fluid is impinged, and a rotatable hollow shaft carrying agitators and provided with holes through which jets of steam are directed against a moving film of cream. Group 20-23. Reg. No. 8,547.

PAT. 2,100,828. Drying tunnel. Patented Nov. 30, 1937.
A drying tunnel which may be used for drying scalded poultry or for chilling defeathering wax on poultry.
Group 35-51. Reg. No. 8,548.

PAT. 2,102,125. Whipping apparatus. Patented Dec. 14, 1937.
An apparatus for whipping egg whites preparatory to drying in the form of a film. Group 35-51.
Reg. No. 8,549.

PAT. 2,109,575. Method of removing oil from eggs. Patented Mar. 1, 1938.
Method of removing gloss from eggs, which comprises submerging the eggs in a solution including an acid material, such as monosodium phosphate, and a wetting agent, such as sodium lauryl sulphate. Group 20-99.
Reg. No. 8,550.

PAT. 2,110,237. Sediment tester. Patented Mar. 8, 1938.
A sediment tester, comprising two vessels joined by a threaded union and a filter interposed between said vessels. Group 35-51. Reg. No. 8,551.

PAT. 2,122,029. Method of deodorizing. Patented June 28, 1938.
A method of deodorizing fluid, which comprises causing the preheated fluid to travel in a thin film, impinging jets of steam against said film, and immediately removing steam and volatile gases. Group 20-23.
Reg. No. 8,552.

PAT. 2,124,691. Method and apparatus for dipping poultry. Patented July 26, 1938.
A device and method for automatically coating fowl.
Group 20-15. Reg. No. 8,553.

PAT. 2,137,899. Treatment of cream. Patented Nov. 22, 1938.
Method of whipping cream by adding thereto a small amount of glyceryl ester of a higher fatty acid having a free glyceryl alcohol group and thereafter whipping the cream. Group 20-23. Reg. No. 8,554.

PAT. 2,163,907. Humidity control. Patented June 27, 1939.
A method of controlling humidity of storage rooms, such as for eggs, which comprises placing in a refrigerated chamber hygroscopic material of an equivalent nature to the material normally placed in the room, and adding water in controlled amount to satisfy the absorption needs of the hygroscopic material. Group 35-51-84.
Reg. No. 8,555.

PAT. 2,162,209. Egg product. Patented Dec. 8, 1939.
An egg product consisting essentially of dry egg material and a glyceryl ester of a higher fatty acid having free glyceryl alcohol group. Group 20-99. Reg. No. 8,556.

PAT. 2,182,212. Labeled cheese package. Patented December 5, 1939.
A cheese package, and method of preparing same, comprising a body of cheese covered with paraffin and bearing a waxed label, the wax of the label being bonded to the wax covering of the cheese package and having wax pegs extending through the label into the body of the cheese. Group 20-22. Reg. No. 8,557.

PAT. 2,182,335. Method of deodorising milk and cream. Patented Dec. 5, 1939.
A method of deodorizing cream which comprises mixing the preheated cream with superheated steam, discharging the mixture of superheated steam and cream in a chamber and drawing off steam and volatile gases escaping from the mixture. Group 20-23. Reg. No. 8,558.

PAT. 2,183,515. Reconstitution of dried egg material. Patented Dec. 12, 1939.
A method of reconstituting dried egg material which comprises adding thereto water in the proportion normally found in fresh egg material and a surface active agent, such as sodium lauryl sulphate, and thereafter whipping the mixture. Group 20-99. Reg. No. 8,559.

PAT. 2,183,516. Egg material treatment. Patented Dec. 12, 1939.
A method of preparing egg material, which comprises adding thereto sulphated and sulphonated long chain alcohols to improve whipping qualities thereof. Group 20-99. Reg. No. 8,560.

PAT. 2,200,963. Treatment of egg whites. Patented May 14, 1940.
A method of treating egg whites which comprises whipping the egg whites to a foam and thereafter drying the egg whites in strands of foam. Group 20-99. Reg. No. 8,561.

PAT. 2,251,496. Method of preparing cheese. Patented Aug. 5, 1941.
A method of treating curd which comprises subjecting matted or cheddared curd, to which no salt has been added, to a temperature of from 50° F. to 60° F. until a creamy texture is developed. Group 20-23. Reg. No. 8,562.

PAT. 2,261,594. Packing frame. Patented Nov. 4, 1941.
A device comprising a supporting member provided with adjustable clamping means adapted for use in packing cases, such as poultry packing cases. Group 25-99. Reg. No. 8,563.

PAT. 2,267,911. Ice cream. Patented Dec. 30, 1941.
A method of improving ice cream and the like, which comprises adding small quantities of metaphosphoric acids or acidified salts of metaphosphoric acids to the ice cream mix. Group 20-24. Reg. No. 8,564.

PAT. 2,273,469. Dried milk product. Patented Feb. 17, 1942.
A food product, and method of preparing the same, comprising a dried mixture of skimmed milk with about 0.05 percent to 5 per cent starch based on the solids content of the milk. Group 20-23. Reg. No. 8,565.

PAT. 2,279,205. Ice cream. Patented Apr. 7, 1942.
Ice cream or frozen confection mix is prepared by incorporating in the mix a curd prepared from skimmed milk or whole milk, and a salt prepared by fusing a mixture of anhydrous disodium phosphate, sodium sesquicarbonate and citric acid. Group 20-24. Reg. No. 8,566.

PAT. 2,292,323. Wax coating composition. Patented Aug. 4, 1942.
A method of dissolving propionic acid in paraffin, which comprises mixing the paraffin with a higher fatty acid, such as stearic acid, and propionic acid. Group 29-11. Reg. No. 8,567.

PAT. 2,314,317. Poultry chilling. Patented Mar. 16, 1943.
A method and apparatus for the freezing of poultry in such manner as to avoid freezer burns on the outer surface thereof by introducing a normal gaseous refrigerant into and in direct contact with the body cavity of the carcass. Group 35-84. Reg. No. 8,568.

PAT. 2,319,186. Milk product. Patented May 11, 1943.
An improved dried skim milk product, comprising a dry mixture of normal skim milk and skim milk which has been completely digested with a proteolytic enzyme. Group 20-23. Reg. No. 8,569.

PAT. 2,319,187. Cheese emulsification. Patented May 11, 1943.
A small quantity of ammonium salts, such as ammonium metaphosphate, diammonium, disodium pyrophosphate, are incorporated in cheese as emulsifying or fluxing agents. Group 20-22. Reg. No. 8,570.

PAT. 2,322,198. Coating compositions. Patented June 15, 1943.
An improved wax composition for coating cheese, comprising wax and a small amount of an ester of a fatty acid and a polyhydric alcohol, having one or more free alcoholic hydroxyl groups on the polyhydric alcohol component of the ester. Groups 28-61; 29-11. Reg. No. 8,571.

PAT. 2,329,470. Cheese coating. Patented Sept. 14, 1943.
A coating for cheese, comprising a mixture of petroleum wax, such as paraffin, and a synthetic rubber resin. Group 29-11. Reg. No. 8,572.

PAT. 2,334,608. Slicer. Patented Nov. 16, 1943.
A device for cutting soft plastic materials, such as cheese, including a U-shaped yoke for holding the cutting wire. Group 33-41. Reg. No. 8,573.

PAT. 2,336,358. Cheese treatment. Patented Dec. 7, 1943.
A method of packaging cheese to prevent growth of mold, which comprises coating the cheese with a petroleum wax containing a higher fatty acid and propionic acid. Group 29-11. Reg. No. 8,574.

PAT. 2,342,345. Whitening eggs. Patented Feb. 22, 1944.
A method of improving the color of shell eggs having a relatively dark natural color, which comprises subjecting the shell to the action of a reducing agent, such as sodium hyposulfite. Group 28-89. Reg. No. 8,575.

PAT. 2,342,346. Egg whitening. Patented Feb. 22, 1944.
A method of treating colored shell eggs with a peptizing agent, such as the thiosulphates, urea, etc., to whiten the eggs. Group 28-89. Reg. No. 8,576.

PAT. 2,342,350. Covering for heads of dressed poultry. Patented Feb. 22, 1944.
A method of preparing poultry for market which comprises coating the heads of poultry with a homogenous mixture of wax and a synthetic rubber resin.
Group 20-15. Reg. No. 8,577.

PAT. 2,353,869. Defeathering compound. Patented July 18, 1944.
A defeathering composition, comprising mainly rosin, a petroleum wax, and a small amount of a water insoluble soap of a metal having a valence greater than one.
Groups 20-15; 29-11. Reg. No. 8,578.

PAT. 2,371,867. Egg washing machine. Patented Mar. 20, 1945.
A washing machine for spherical objects, such as an egg or an orange, having an improved brush assembly structure and conveyor structure. Group 35-11.
Reg. No. 8,579.

PAT. 2,376,076. Machine for wrapping butter. Patented May 15, 1945.
A machine for rapidly creasing and folding a wrapping material around a deformable product, such as butter.
Group 35-51. Reg. No. 8,580.

PAT. 2,376,838. Filling machine. Patented May 22, 1945.
An apparatus for filling containers with a desired volume of plastic material, such as ground cheese, having an air operated booster cylinder for positively moving a metering piston in a metering cylinder to rapidly and forcibly displace the material therefrom. Group 35-51.
Reg. No. 8,581.

PAT. 2,377,644. Treatment of egg whites. Patented June 5, 1945.
A method of preparing an improved concentrated liquid egg white which comprises removing not more than 90 percent of the water, whereby a leathery skin-like surface is formed on the product, and maintaining the concentrated material at a temperature of from 45° F. to 50° F. for about 12 to 14 hours to produce a uniformly viscous consistency.
Group 20-99. Reg. No. 8,582.

PAT. 2,382,737. Egg separator. Patented Aug. 14, 1945.
A device for separating egg yolks from egg whites and for grading the yolk as to color, including a color comparator adjacent the egg yolk as it is being separated from the white. Groups 20-99; 35-51.
Reg. No. 8,583.

PAT. 2,387,217. Wrapper. Patented Oct. 16, 1945.
A wrapper for ice cream and the like comprising a flexible heat insulating layer having corrugated paper secured to the inner surface, the corrugations being of such size that a gas from dry ice may flow therethrough when the package is completed. Group 26-99.
Reg. No. 8,584.

PAT. 2,394,833. Wax compositions. Patented Feb. 12, 1946.
Reaction products obtained by reacting an alkylolamine with an acylating substance are added to wax to form a composition adapted for coating cheese. Group 29-11.
Reg. No. 8,585.

PAT. 2,395,587. Egg product. Patented Feb. 26, 1946.
Egg material is preserved by incorporating therein sugar and a partial ester of a polyhydric alcohol and a higher fatty acid. Group 20-99.
Reg. No. 8,586.

PAT. 2,423,299. Process and apparatus for treating poultry. Patented July 1, 1947.
An apparatus and process for removing undigested feed from the crops of poultry carcasses. Group 35-51.
Reg. No. 8,587.

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Fats and oils

PAT. 1,845,708. Fat compositions. Patented Feb. 16, 1932.
Fatty materials, including soap, are stabilized against rancidity by incorporating therein a cyanamide compound. Group 28-89. Reg. No. 8,588.

PAT. 1,854,270. Rendering method. Patented Apr. 19, 1932.
Lard, grease, etc., are rendered from animal substances by passing steam through the material under pressure to break down the cellular structure, applying dry heat to drive off moisture, and pressing to remove oil.
Group 20-11. Reg. No. 8,589.

PAT. 1,866,509. Chill roll. Patented July 5, 1932.
A direct expansion chill roll comprising an intake and an outlet pipe and a float control valve to control the flow of a liquefied gaseous refrigerant into the roll.
Group 35-84. Reg. No. 8,590.

PAT. 1,885,281. Method of neutralizing fatty acids

in oils & fats. Patented Nov. 1, 1932.
Free fatty acids in oils and fats are neutralized by means of sodium bicarbonate under reduced pressure and at a reaction temperature of at least 320° F.
Group 28-89. Reg. No. 8,591.

PAT. 1,890,585. Method of stabilizing fats and oils. Patented Dec. 13, 1932.
Fats and oils are stabilized by adding a carotinoid pigment thereto. Group 28-89. Reg. No. 8,592.

PAT. 1,906,713. Treatment of cream for butter making. Patented May 2, 1933.
A process of treating off-flavor cream by mixing buttermilk therewith, removing the serum and churning to produce butter. Group 20-25. Reg. No. 8,593.

PAT. 1,974,626. Treatment of cracklings. Patented Sept. 25, 1934.
A method of increasing the stability of cracklings which consists in heating the cracklings and while heated blowing an inert gas, such as steam, through the mass.
Group 20-99. Reg. No. 8,594.

PAT. 2,050,528. Salad oil and method of making same. Patented Aug. 11, 1936.
A method of manufacturing salad oil which comprises adding a small amount of lecithin to winterized cotton seed oil to inhibit crystallization.
Group 20-92. Reg. No. 8,595.

PAT. 2,052,289. Fat stabilization. Patented Aug. 25, 1936.
A method of stabilizing lard by incorporating therein a quantity of crude soybean oil. Groups 20-11; 28-33. Reg. No. 8,596.

PAT. 2,053,855. Lard pail. Patented Sept. 8, 1936.
A container having paper or fibrous body walls and metal ends, and containing a bail ear and a freely movable bail. Group 26-64. Reg. No. 8,597.

PAT. 2,060,587. Oil and fat treatment and product. Patented Nov. 10, 1936.
A method of stabilizing shortening by adding thereto crude cotton seed oil. Groups 20-92; 28-21.
Reg. No. 8,598.

PAT. 2,062,181. Measuring and filling machine. Patented November 24, 1936.
A pedal operated measuring and filling machine for dispensing predetermined amounts of materials, such as oils and greases. Group 35-51. Reg. No. 8,599.

PAT. 2,067,022. Carton. Patented Jan. 5, 1937.
A fiber board carton which may be assembled from a blank containing end slots and tongues to hold the carton together. Group 26-64. Reg. No. 8,600.

PAT. 2,095,740. Antioxidant. Patented Oct. 12, 1937.
A method of stabilizing lard, which comprises adding thereto a distillate secured by the deodorization of hydrogenated sesame oil. Group 20-11; 28-29.
Reg. No. 8,601.

PAT. 2,108,922. Stabilization of oil. Patented Feb. 22, 1938.
A method of stabilizing shortening which comprises adding thereto hydrogenated kapok oil. Groups 20-11; 28-29. Reg. No. 8,602.

PAT. 2,113,216. Stabilization of oleo oils. Patented Apr. 5, 1938.
A method of stabilizing oil and fats which comprises adding thereto hydrogenated refined soybean oil and lecithin. Groups 20-11; 28-23.
Reg. No. 8,603.

PAT. 2,119,699. Consistency tester. Patented June 7, 1938.
A consistency tester for materials, such as shortening, including a pressure measuring gauge and a working head operatively connecting with the gauge comprising a circular ring having a conical orifice and tapered resistance shoulders. Group 35-51. Reg. No. 8,604.

PAT. 2,124,700. Larding needle. Patented July 26, 1938.
A larding needle having filleted facets converging to a point. Group 35-51. Reg. No. 8,605.

PAT. 2,124,707. Oil and fat deodorization. Patented July 26, 1938.
A deodorizer in which steam is admitted at the bottom of a tank through a rotatable perforated disc, or a series of discs, to break up the steam into small bubbles. Group 20-11. Reg. No. 8,606.

PAT. 2,155,731. Paper treatment. Patented Apr. 25, 1939.
A method of treating paper stock for use in packaging products containing fats and oils, which consists in incorporating citric acid solution in the paper stock.
Group 26-25. Reg. No. 8,607.

PAT. 2,158,163. Method of bleaching oils and fats. Patented May 16, 1939.
A method of bleaching oil by treatment with a solution of hydrogen peroxide and a nitrite. Groups 20-11; 28-89. Reg. No. 8,608.

PAT. 2,163,912. Treatment of oleo oil. Patented June 27, 1939.
A method of stabilizing oleo oil, which comprises alkali refining the oil and thereafter incorporating therein hydrogenated refined soybean oil.
Groups 20-93; 28-23.
Reg. No. 8,609.

PAT. 2,176,121. Filling machine. Patented Oct. 17, 1939.
A measuring and filling device having automatic means for feeding cartons to and from a fixed discharge nozzle and for preventing the discharge of material from the nozzle in the absence of a properly fed carton.
Group 35-51. Reg. No. 8,610.

PAT. 2,197,269. Antioxidant for fats and oils. Patented Apr. 16, 1940.
The method of stabilizing fatty material by incorporating therein reaction products of castor oil and an aliphatic acid having at least two carboxylic acid groups.
Group 28-29. Reg. No. 8,611.

PAT. 2,200,982. Method for crystallizing fats. Patented May 14, 1940.
A method of removing higher melting point constituents from fat or oil which comprises quickly chilling the oil to a temperature sufficient to form seed crystals of the higher melting components, quickly chilling the chilled oil to a lower temperature to increase the seed crystals by accretion, then separating the crystals from the oil.
Group 35-84. Reg. No. 8,612.

PAT. 2,201,692. Stabilization of shortening. Patented May 21, 1940.
The stabilization of fats and oils against rancidity by incorporating therein a small amount of hydrogenated and refined soybean oil. Groups 20-11; 28-23.
Reg. No. 8,613.

PAT. 2,201,715. Clutch mechanism. Patented May 21, 1940.
An improved clutch especially adapted for driving machines such as measuring and filling machines.
Group 35-66. Reg. No. 8,614.

PAT. 2,236,589. Shortening treatment. Patented Apr. 1, 1941.
A method of stabilizing shortening which comprises adding thereto from .001 per cent to .05 per cent of lactic acid. Groups 20-92; 28-89.
Reg. No. 8,615.

PAT. 2,251,485. Shortening stabilization. Patented Aug. 5, 1941.
Fats and oils are treated with hydroxy mono basic aliphatic acids, such as pentose and hexose sugar acids, to retard rancidity. Groups 20-92; 28-89. Reg. No. 8,616.

PAT. 2,266,979. Filling machine. Patented Dec. 23, 1941.
A measuring and filling apparatus for dispensing liquid and semiliquid materials, such as oils and fats. Group 35-51. Reg. No. 8,617.

PAT. 2,292,027. Oil treatment. Patented Aug. 4, 1942.
A method of bleaching glyceride oils which comprises treating refined glyceride oil with activated adsorbent earth, separating the earth and heating the oil to about 350° to 400° F. Group 28-89. Reg. No. 8618.

PAT. 2,309,079. Treatment of paper. Patented Jan. 19, 1943.
Cardboard and other materials used for packaging fat-containing products are treated with an anti-oxidant, such as a phenolic compound. Group 28-91.
Reg. No. 8,619.

PAT. 2,319,193. Filling and sealing device. Patented May 11, 1943.
A filling and weighing apparatus for filling containers with a definite quantity of material, provided with means for automatically regulating the flow of material to be packaged. Group 35-74. Reg. No. 8,620.

PAT. 2,319,908. Container filling and weighing apparatus. Patented May 25, 1943.
A filling machine capable of filling containers with precise, weighed quantities of liquid materials.
Group 35-74. Reg. No. 8,621.

PAT. 2,320,319. Oleaginous material. Patented May 25, 1943.
Fats and oils are treated to prevent foaming during deep fat frying by incorporating therein a water soluble soap, phosphoric acids, etc. Groups 20-92; 28-41.
Reg. No. 8,622.

PAT. 2,320,844. Preparation of organic acid esters. Patented June 1, 1943.
A process of esterifying an alcohol with a long chain carboxylic acid compound in the presence of activated carbon at elevated temperatures. Groups 28-89.
Reg. No. 8,623.

PAT. 2,322,186. Oleaginous preparation. Patented June 15, 1943.
Method of improving the resistance to foaming of fatty material in deep fat frying, which comprises partially hydrogenating the fatty material, adding concentrated phosphoric acid to the partially hydrogenated fatty material in the presence of the hydrogenation catalyst and then removing the catalyst. Group 20-92.
Reg. No. 8,624.

PAT. 2,322,187. Process of deep fat frying. Patented June 15, 1943.
A process of reducing foaming of fatty material in deep fat frying, which comprises adding thereto a small amount of oil soluble salt of an organic polyoxygen containing acid, such as sodium lauryl sulphate. Group 28-89.
Reg. No. 8,625.

PAT. 2,344,470. Paper treatment. Patented Mar. 14, 1944.
A method of treating paper stock used in packaging bakery products with phosphoric acid to inhibit rancidity of the fats absorbed by the wrapping material.
Group 28-89.
Reg. No. 8,626.

PAT. 2,357,543. Stabilization of fatty materials. Patented Sept. 5, 1944.
Fatty materials are stabilized against reversion by steam deodorization in the presence of a refined soybean or sesame oil, which has been hydrogenated until the melting point is at least 100°F. Groups 20-11; 28-23. Reg. No. 8,627.

PAT. 2,374,234. Stabilization of fatty materials. Patented Apr. 24, 1945.
A method of treating fatty materials to improve the reversion resistance by incorporating into the fatty product prior to or during deodorization a small amount of any antioxidant material, such as gum guaiac. Group 20-11. Reg. No. 8,628.

PAT. 2,380,910. Shaking and conveying machine. Patented July 31, 1945.
A mechanism for jarring air bubbles out of a viscous material, such as peanut butter, while conveying the container. Group 35-51. Reg. No. 8,629.

PAT. 2,408,906. Preparation of synthetic glycerides. Patented Oct. 8, 1946.
The unsaturated bonds of a fatty acid are halogenated, the saturated acid converted into an acid chloride, the acid chloride reacted with a polyhydroxy compound and thereafter the ester dehalogenated. Groups 20-11; 28-89. Reg. No. 8,630.

PAT. 2,416,196. Method for solvent extraction of fatty material. Patented Feb. 18, 1947.
Oleaginous material is agitated in the presence of a solvent and water, at a temperature in the region of the boiling point of water but below the boiling point of the solvent, then the agitation and the temperature is reduced and the layer of solvent and fat separated. Group 20-11. Reg. No. 8,631.

Ham, Bacon and Fresh Pork

PAT. 1,852,257. Bacon treating. Patented Apr. 5, 1932.
A method of treating bacon bellies to flatten them by means of bars during the smoking operation. Group 35-51. Reg. No. 8,632.

PAT. 1,855,475. Branding device. Patented Apr. 26, 1932.
A branding device containing at the end of the shaft an electrical heating head and pins inserted therein to provide searing points. Group 35-51. Reg. No. 8,633.

PAT. 1,855,919. Meat branding. Patented Apr. 26, 1932.
A method of branding meat products, such as ham, which comprises encasing the meat in a stockinette and thereafter impressing a branded impression on the fabric and on the meat below. Groups 22-11; 39-54. Reg. No. 8,634.

PAT. 1,856,920. Refrigerated food package. Patented May 3, 1932.
A refrigerated package containing a solid refrigerant such as solid carbon dioxide at each end and passages for circulation of cold gas around the product. Group 35-84. Reg. No. 8,635.

PAT. 1,863,903. Method of branding edible animal carcasses. Patented June 21, 1932.
A method of branding carcasses which consists in changing the color of portions of the tissues by means of a reagent, such as nitric and sulfuric acid. Group 28-89. Reg. No. 8,636.

PAT. 1,866,508. Meat holding method. Patented July 5, 1932.
A method of mechanically restoring smoked bacon slabs to their original planar form by applying a straight form to the concave side of the slabs while maintaining a yieldable pressure against the convex sides of the slabs. Group 35-51. Reg. No. 8,637.

PAT. 1,868,071. Meat stamping ink. Patented July 19, 1932.
A brown ink consisting of yellow A B methyl violet base, ether and sufficient oleic acid to partially dissolve the methyl violet. Group 28-89-99. Reg. No. 8,638.

PAT. 1,870,581. Bacon treating method. Patented Aug. 9, 1932.
A method of suspending pork bellies which comprises separating but not severing a portion of the skin from the belly and suspending the belly by said separated skin. Group 20-11. Reg. No. 8,639.

PAT. 1,870,584. Comb hanger straightening method and device. Patented Aug. 9, 1932.
A device for straightening bacon comb hangers comprising complementary dies provided with both receiving and straightening recesses and projections. Group 35-51. Reg. No. 8,640.

PAT. 1,886,926. Meat packing conveyor. Patented Nov. 8, 1932.
An endless belt type of conveyor used in the packaging of bacon containing grooves for the accurate spacing of sliced bacon on the moving conveyor. Group 35-51. Reg. No. 8,641.

PAT. 1,895,641. Branding meat product. Patented Jan. 31, 1933.
A branding ink comprising nigrosine, glycerine, glacial acetic acid and alcohol. Group 28-99. Reg. No. 8,642.

PAT. 1,909,029. Slicing machine. Patented May 16, 1933.
A slicing machine including a knife having blade portions formed to provide a cutting edge in the shape of a conical helix. Group 35-51. Reg. No. 8,643.

PAT. 1,909,114. Shipping container. Patented May 16, 1933.
A shipping container comprising a skeleton wire bound crate in which is inserted a solid fiber carton and a waxed bag, the carton and bag having ends which fold over the goods in the crate. Groups 25-54; 26-32-64. Reg. No. 8,644.

PAT. 1,913,828. Means for wrapping food products. Patented June 13, 1933.
A device for wrapping food products, such as pork loins, in a cloth covering comprising a magazine for the covering material and a guideway for guiding an article into wrapping position. Group 35-51. Reg. No. 8,645.

PAT. 1,913,832. Hanger for bacon. Patented June 13, 1933.
A bacon hanger including a metal skewer in combination with a chain or other flexible metal string whereby the bacon is held firmly to the skewer, thus preventing curling during smoking or storing. Group 35-51. Reg. No. 8,646.

PAT. 1,913,834. Slicing machine. Patented June 13, 1933.
A slicing machine including a traveling apron and a cooperating overhead conveyor which provides a positive feed to the slicing element. Group 35-51. Reg. No. 8,647.

PAT. 1,915,293. Clamp bacon hanger. Patented June 27, 1933.
A bacon hanger of the safety skewer type equipped with a suspension clamping lever arranged to engage the lean side of a belly or bacon slab and cooperating with the skewer to form a clamp to prevent curling during smoking. Group 35-51. Reg. No. 8,648.

PAT. 1,915,294. Clamp comb hanger. Patented June 27, 1933.
A bacon hanger comprising a clamp comb in combination with a lever clamp adapted as the belly shrinks to follow the same and hold the upper end of the face of the belly in proper position at all times. Group 35-51. Reg. No. 8,649.

PAT. 1,916,464. Bacon hanger. Patented July 4, 1933.
A bacon hanger containing a safety pin type skewer with a wire extending around the lean side of the bacon. Group 35-51. Reg. No. 8,650.

PAT. 1,927,874. Belly inspection device. Patented Sept. 26, 1933.
A device for the detection of seeds in sow bellies which includes means for passing a beam of light through the bellies. Group 35-51. Reg. No. 8,651.

PAT. 1,928,718. Skin incisor. Patented Oct. 3, 1933.
A power driven hand tool for making skewer incisions in the skin of bacon bellies. Group 35-51. Reg. No. 8,652.

PAT. 1,928,877. Meat mold. Patented Oct. 3, 1933.
A mold comprising an adjustable end plate to vary the length of the mold and a spring pressed top pressing plate to produce a more uniform rectangular shaped ham. Group 35-51. Reg. No. 8,653.

PAT. 1,928,917. Meat mold. Patented Oct. 3, 1933.
A meat mold equipped with top and end pressure plates adapted to apply spring pressure to the meat at the top and end to shape the meat into rectangular form while the meat is being cooked or chilled. Group 35-51. Reg. No. 8,654.

PAT. 1,935,616. Means for hanging bacon. Patented Nov. 21, 1933.
A "no hole" bacon hanger on which a safety pin skewer is laced through a ribbon-like slot on a strip of skin at one end of a slab, the lean side of the slab being clamped to the skewer hanger by a strip of fabric. Group 35-51. Reg. No. 8,655.

PAT. 1,940,035. Belly press. Patented Dec. 19, 1933.
A press for removing the curl from smoked bacon comprising a frame and movable press plates and means for sliding the movable press plates in the frame to apply pressure to the product. Group 35-51. Reg. No. 8,656.

PAT. 1,955,122. Dehairing machine. Patented Apr. 17, 1934.
A dehairing machine comprising a rotary carrier and a plurality of protractile beater arms pivotally mounted on a carrier and arranged to swing freely through centrifugal action. Group 35-51. Reg. No. 8,657.

PAT. 1,957,623. Slicing machine. Patented May 8, 1934.
A slicing machine including a rotary knife and a separator to effect clearance of the slices and eliminate frictional drag. Group 35-51. Reg. No. 8,658.

PAT. 1,963,272. Box. Patented June 19, 1934.
A shipping case constructed of fiber board, or similar material, with more than one thickness in those portions of the case where greater strength is needed. Group 26-64. Reg. No. 8,659.

PAT. 1,967,488. Branding means. Patented July 24, 1934.
An internal branding device having long branding elements associated with tubular conduits through which ink is admitted into cuts formed by the branding elements. Group 39-54. Reg. No. 8,660.

PAT. 1,967,870. Bacon hanger. Patented July 24, 1934.
A bacon hanger comprising a frame provided with a jaw and pivot rod, and a clamping lever fulcrumed on the pivot rod and having a clamping member to cooperate with the said jaw. Group 35-51. Reg. No. 8,661.

PAT. 1,971,460. Method of treating meat. Patented Aug. 28, 1934.
A method of increasing the percentage of meat in the center slices of the ham at the expense of the butt and shank by suspending the ham from the skeletal structure rather than from a string through the shank in the conventional manner. Group 20-11. Reg. No. 8,662.

PAT. 1,973,695. Belly roller and side splitting machine. Patented Sept. 18, 1934.
A belly roller and side splitting machine including a guide means or shoe along which the rolled belly moves and by which it is guided in a straight path as the rolled belly section is severed by a cutter. Group 35-51. Reg. No. 8,663.

PAT. 1,973,919. Feeding device. Patented Sept. 18, 1934.
A device for feeding bacon slabs to a slicing machine in which the slabs drop from a magazine to a slowly moving conveyor, thence to a faster moving conveyer which feeds them to the knife. Group 35-51. Reg. No. 8,664.

PAT. 1,974,603. Slicing machine. Patented Sept. 25, 1934.
A slicing machine assembly including a knife which may be quickly removed by loosening two J bolts thus releasing a dove-tailed plate which holds the knife in position. Group 35-51. Reg. No. 8,665.

PAT. 1,975,916. Machine for producing square hams. Patented Oct. 9, 1934.
A device for squaring hams including a cooperating plunger and shape box to square the ham and a separate plunger for forcing the shaped ham into a ham boiler. Group 35-51. Reg. No. 8,666.

PAT. 1,975,917. Conveyor. Patented Oct. 9, 1934.
A sliced bacon conveyor which receives the slices in aggroupment and inverts them after a sheet of wrapping material has been applied. Group 35-62. Reg. No. 8,667.

PAT. 1,976,448. Meat soaking mechanism. Patented Oct. 9, 1934.
A meat soaking mechanism comprising a soaking vat having a plurality of channels defined by partitions, and an overhead conveyor for carrying the meat through said channels. Group 35-51. Reg. No. 8,668.

PAT. 1,977,870. Cutter. Patented Oct. 23, 1934.
A reciprocating knife device for cutting Cellophane at a wrapping table. Group 35-51. Reg. No. 8,669.

PAT. 1,989,252. Classifying means. Patented Jan. 29, 1935.
A machine for classifying smoked bellies according to the number of slices per pound or one-half pound which may be secured from the bellies after pressing. Group 35-51. Reg. No. 8,670.

PAT. 1,991,304. Slicing machine. Patented Feb. 12, 1935.
A bacon slicing machine comprising a conveyor, and spring-urged presser rollers for feeding the bacon to the cutting element. Group 35-62. Reg. No. 8,671.

PAT. 1,991,315. Method for testing meat. Patented Feb. 12, 1935.
A method of inspecting meat for internal bruises which comprises inserting into the meat an absorbent material which is thereafter withdrawn and inspected. Group 35-51. Reg. No. 8,672.

PAT. 1,991,316. Meat inspection device. Patented Feb. 12, 1935.
A special type of needle for inserting absorbent material into meat to detect internal bruises. Group 35-51. Reg. No. 8,673.

PAT. 1,993,586. Slicing machine. Patented Mar. 5, 1935.
A slicing machine for spacing groups of slices on a conveyor which includes a fork-shaped member extending below the cutter and means operatively associated with the cutter for imparting movement to the fork to space the groups on the conveyor. Group 35-51. Reg. No. 8,674.

PAT. 1,995,048. Slicing machine. Patented Mar. 19, 1935.
A slicing machine in which the product to be sliced is passed over fluted rollers and is held down by a plurality of independently mounted yieldable rollers. Group 35-51. Reg. No. 8,675.

PAT. Re. 19,830. Slicing machine. Reissued Jan. 21, 1936. Original No. 1,942,991, dated Jan. 9, 1934.
A bacon slicing machine in which the feeding mechanism may be retracted in respect to the knife so as to cause periodic cessations of the slicing operation, thus permitting the formation of groups of slices. Group 35-51. Reg. 8,676.

PAT. 2,001,512. Slicing machine. Patented May 14, 1935.
A slicing machine attachment for controlling the motion of bacon slices from the time they are cut from a slab until deposition on a suitable conveyor means. Group 35-51. Reg. No. 8,677.

PAT. 2,002,146. Meat treating method. Patented May 21, 1935.
A process of curing meat which includes injecting into said meat an agent such as sodium malate to impart a pink pigment. Group 20-11. Reg. No. 8,678.

PAT. 2,003,862. Meat package. Patented June 4, 1935.
A sliced bacon package including a central stiffening member over which slices of bacon are overlapped. Group 20-11. Reg. No. 8,679.

PAT. 2,004,757. Meat holder. Patented June 11, 1935.
A device for holding products, such as boiled ham, during the slicing thereof, so as to avoid broken slices. Group 35-51. Reg. No. 8,680.

PAT. 2,006,091. Conveyor. Patented June 25, 1935.
A bacon slicing machine, having an endless conveyor to receive slices of bacon in spaced groups and means for applying wrapping material to the group of bacon slices. Group 35-62. Reg. No. 8,681.

PAT. 2,008,090. Slicing machine. Patented July 16, 1935.
A slicing machine assembly including a pair of synchronized receiving and delivering forks for spacing groups of bacon slices on a moving conveyor. Group 35-51. Reg. No. 8,682.

PAT. 2,009,259. Weighing means. Patented July 23, 1935.
An automatic trip scale for weighing and delivering slices of bacon to a conveyor. Group 35-74. Reg. No. 8,683.

PAT. 2,009,824. Measuring and packaging method. Patented July 30, 1935.
A method of selecting, by volumetric means, slabs of bacon having cross-sectional areas within certain limits. Group 35-51. Reg. No. 8,684.

PAT. 2,012,489. Slicing machine. Patented Aug. 27, 1935.
A meat slicing machine having adjustable blades in the shape of a conical helix. Group 35-51. Reg. No. 8,685.

PAT. 2,017,469. Container. Patented Oct. 15, 1935.
A collapsible refrigerator container having hinged insulated side walls, removable insulated end pieces, racks within said container adjacent the sides and bottom to provide air circulation. Group 35-84. Reg. No. 8,686.

PAT. 2,020,843. Meat forming. Patented Nov. 12, 1935.
A method of treating pork which consists in frenching tenderloins on the sides, freezing, forming the meat into a ribbon, and then slicing the ribbon into patties. Group 20-11. Reg. No. 8,687.

PAT. 2,020,846. Means for scalding hogs. Patented Nov. 12, 1935.
A device for scalding hog carcasses including a scalding vat and conveyor means to submerge the carcasses in the vat. Group 35-51-62. Reg. No. 8,688.

PAT. 2,034,751. Feeding device. Patented Mar. 24, 1936.
An automatic feeding device for use with a slicing machine and for transferring slabs of bacon to a cutting element. Group 35-62. Reg. No. 8,689.

PAT. 2,036,001. Slicing machine. Patented Mar. 31, 1936.
A bacon slicing machine having a special knife with a cutting and drawing action. Group 35-51. Reg. No. 8,690.

PAT. 2,036,012. Slicing machine. Patented Mar. 31, 1936.
A feeding means for automatic bacon slicing machines in which the slabs of bacon are passed first through a conveyor and roller and then between a pair of superimposed conveyors. Group 35-51-62. Reg. No. 8,691.

PAT. 2,038,770. Slicing machine. Patented Apr. 28, 1936.
A bacon slicing machine including a series of holding fingers to hold down the slab immediately preceding the knife. Group 35-51. Reg. No. 8,692.

PAT. 2,038,864. Slicing and packing machine. Patented Apr. 28, 1936.
A strand conveyor and fork mechanism movable at variable speeds for spacing groups of slices on a conveyor. Group 35-62. Reg. No. 8,693.

PAT. 2,043,361. Slicing machine. Patented June 9, 1936.
A bacon slicing machine having a plurality of groups of longitudinally reciprocating and vertically oscillating combined feeding and bacon supporting bars. Group 35-51. Reg. No. 8,694.

PAT. 2,047,399. Slicing machine. Patented July 14, 1936.
An automatic slicing machine which comprises a cutting blade, an article holder and a conveyor, together with means for driving these elements in a predetermined synchronized relationship. Group 35-51-62. Reg. No. 8,695.

PAT. 2,047,400. Slicing machine. Patented July 14, 1936.
A bacon slicing machine for depositing groups of slices upon a conveyor in which cams are employed to move the knife from and toward the cutting plane and to interrupt the feeding means during the non-cutting periods. Group 35-51. Reg. No. 8,696.

PAT. 2,052,749. Hog drop. Patented Sept. 1, 1936.
An automatic device at the end of the bleeding rail to unshackle hog carcasses, comprising guide rails carrying picker discs which slacken the chain and permit the hog to drop into the scalding vat. Group 35-51. Reg. No. 8,697.

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PAT. 2,060,540. Slicing machine attachment. Patented Nov. 10, 1936.
A slicing machine attachment having transversely spaced guiding fingers for keeping the bacon positioned while slicing it. Group 35-51. Reg. No. 8,698.

PAT. 2,060,559. Bacon straightening device. Patented Nov. 10, 1936.
A bacon straightening device comprising two tempered steel wires arched to form a spring and the ends being bent at right angles forming end pieces. Group 35-51. Reg. No. 8,699.

PAT. 2,060,992. Cooker. Patented Nov. 17, 1936.
A meat cooking and smoking chamber provided with a perforated steam pipe, a smoke box, a smoke inlet pipe, and a steam nozzle in said smoke inlet pipe. Group 20-11. Reg. No. 8,700.

PAT. 2,072,660. Covering in meat products. Patented Mar. 2, 1937.
A covering for meat products comprising cellulose sheeting adjacent the meat surface, a coating of gelatin adherent to such cellulose sheeting, and a moisture-proof coating, such as varnish, on the outer surface of said gelatin coating. Group 20-11-99. Reg. No. 8,701.

PAT. 2,073,082. Slicing machine. Patented Mar. 9, 1937.
A bacon slicing machine containing transfer mechanism and clamping means in association with a conveying means having slow moving and fast moving conveying elements. Group 35-51. Reg. No. 8,702.

PAT. 2,073,097. Slice spacer. Patented Mar. 9, 1937.
A transfer means for use in combination with bacon slicing machines to space slices in a conveyor. Group 35-51. Reg. No. 8,703.

PAT. 2,076,959. Slicing machine. Patented Apr. 13, 1937.
A bacon slicing machine containing a two speed conveyor and means for transferring groups of said slices at intervals from the slow moving to the fast moving conveyor elements. Group 35-51. Reg. No. 8,704.

PAT. 2,078,503. Shackle stop. Patented Apr. 27, 1937.
A mechanism for automatically feeding shackled carcasses at spaced intervals to an inclined gravity rail. Group 35-51. Reg. No. 8,705.

PAT. 2,084,856. Means for dehairing hogs. Patented June 22, 1937.
A dehairing apparatus, having a tank, a plurality of opposed rotatable shafts mounted in said tank, and a plurality of scrapers radially disposed on said shafts. Group 35-51. Reg. No. 8,706.

PAT. 2,084,857. Dehairing method. Patented June 22, 1937.
The method of dehairing animal carcasses which comprises rotating the carcasses, simultaneously scuffing the skin surface in one direction and simultaneously scraping the skin surface in the opposite direction. Group 35-51. Reg. No. 8,707.

PAT. 2,110,263. Fluid injection means. Patented Mar. 8, 1938.
A device for pumping fluid into meat products, comprising a tubular needle, a fluid actuating piston, and an elongated pin secured to said piston and slidable in said needle to prevent clogging thereof. Group 35-51. Reg. No. 8,708.

PAT. 2,113,851. Slicing machine. Patented Apr. 12, 1938.
A slicing machine having a movable spring tension shearing means, yieldably mounted relative to and engageable with the cutter. Group 35-51. Reg. No. 8,709.

PAT. 2,119,716. Method of treating bacon. Patented June 7, 1938.
A method of treating bacon which comprises arranging skinned slabs of bacon with their fat and lean surfaces in superposed relationship, and then subjecting the slabs while under pressure to heat to cause the slabs to set. Group 35-51. Reg. No. 8,710.

PAT. 2,137,898. Method of cooking meats. Patented Nov. 22, 1938.
Hams are subjected to heat and smoke in a saturated atmosphere at a temperature of 190° to 195° F. until the inside temperature is 125°F., then the temperature is reduced to 160° to 165°F. and the ham maintained at this temperature until cooked. Group 35-51. Reg. No. 8,711.

PAT. 2,140,163. Meat cooking. Patented Dec. 13, 1938.
Meat products, such as ham, are simultaneously cooked and smoked by subjecting the meat to cooking in a container arranged so that the juices come up above to lid to absorb smoke and carry it into the meat. Group 35-51. Reg. No. 8,712.

PAT. 2,148,533. Carton. Patented Feb. 28, 1939.
A carton adapted for packaging and displaying sliced bacon. Group 26-61. Reg. No. 8,713.

PAT. 2,155,730. Belly skinning machine. Patented Apr. 25, 1939.
A bacon skinning machine, having a pressure means for flattening the irregular skinning surface of a pork belly as moved in relation to the skinning knife. Group 35-51. Reg. No. 8,714.

PAT. 2,180,750. Meat curing. Patented Nov. 21, 1939.
A method of curing meats which comprises incorporating

curing agents in a paste and applying the paste to the meat. Group 20-11. Reg. No. 8,715.

PAT. 2,226,527. Classifying means. Patented Dec. 24, 1940.
An improved means for classifying slabs of bacon to determine in advance the number of slices of a desired thickness a slab will deliver per unit weight.
Group 35-74. Reg. No. 8,716.

PAT. 2,227,683. Evener and stacker. Patented Jan. 7, 1941.
A slice spacing and grouping device for arranging spaced groups of slices of bacon upon a conveyor.
Group 35-62. Reg. No. 8,717.

PAT. 2,236,078. Fleshing machine. Patented Mar. 25, 1941.
A fleshing machine including a conveying means and a fleshing means mounted relative to the conveying means for removing recoverable fats from skins. Group 35-62. Reg. No. 8,718.

PAT. 2,255,635. Inverter and transfer mechanism. Patented Sept. 9, 1941.
A device for inverting groups of bacon slices during transfer of the groups from a receiver conveyor to a delivery conveyor. Group 35-51. Reg. No. 8,719.

PAT. 2,262,784. Scale dial. Patented Nov. 18, 1941.
A scale dial, having standard weight indicia and one or more series of supplementary indicia for indicating the percentage of curing agent to be pumped into meat.
Group 35-74. Reg. No. 8,720.

PAT. 2,266,402. Curing method. Patented Dec. 16, 1941.
A method of curing bacon bellies by soaking cloth in a nitrite solution and spreading the cloth over the surface of the bellies as they are put in cure.
Group 20-11. Reg. No. 8,721.

PAT. 2,281,449. Ham butchering. Patented Apr. 28, 1942.
A method of manufacturing hams from hog carcasses, which comprises suspending a freshly dressed carcass by the hind legs and severing the tendons of the hind legs near the upper end of the fibular tarsal bone whereby the hams assume a relaxed position.
Group 20-11. Reg. No. 8,722.

PAT. 2,288,063. Scale shield. Patented June 30, 1942.
A weighing scale having hermetically sealed working elements. Group 35-74. Reg. No. 8,723.

PAT. 2,303,010. Dial scale attachment. Patented Nov. 24, 1942.
A dial attachment for use with weighing scales which indicates the quality of curing fluid for injection into the meat. Group 35-74. Reg. No. 8,724.

PAT. 2,308,729. Weight classifier. Patented Jan. 19, 1943.
A weighing and grading apparatus wherein articles to be graded are passed over a weighing device and the articles are automatically classified according to weight. Group 35-74. Reg. No. 8,725.

PAT. 2,311,614. Weighing and grading apparatus. Patented Feb. 16, 1943.
An automatic apparatus including a scale having a dial operated in association with an electric eye for weighing and classifying hams. Group 35-74.
Reg. No. 8,726.

PAT. 2,322,199. Divider for meat boilers. Patented June 15, 1943.
A meat boiler, having a removable and adjustable partition in a pan for treating and holding of meat products. Group 35-51. Reg. No. 8,727.

PAT. 2,337,645. Meat treatment. Patented Dec. 28, 1943.
A process for preparing meat products for freezer storage, which comprises forming an ice glaze on the surface of the product and then covering the glazed product with a resistant impervious wax coating.
Group 35-51. Reg. No. 8,728.

PAT. 2,337,666. Wax coating for storage hams. Patented Dec. 28, 1943.
A process for coating hams for frozen storage with amorphous wax-rubber resin covering which can be readily applied and which forms a seal around the product. Group 29-11. Reg. No. 8,729.

PAT. 2,342,373. Smoke oven. Patented Feb. 22, 1944.
A circular glass enclosed smoke oven, including heating and smoking means and a plurality of individual smoking rooms which are disposed about a common point as a center. Group 35-51. Reg. No. 8,730.

PAT. 2,346,953. Ham pumping. Patented Apr. 18, 1944.
A scale including a special dial and photoelectric cell for indicating and controlling the amount of pickling brine which is supplied to meat. Group 35-74.
Reg. No. 8,731.

PAT. 2,366,666. Automatic clamping device. Patented January 2, 1945.
A holding and clamping device for skinning hams in which the article is automatically raised to a working position when the operator removes a knife from a support therefor.
Group 35-51.
Reg. No. 8,732.

PAT. 2,373,361. Apparatus for separating lean meat from fat tissue. Patented Apr. 10, 1945.
A machine designed to automatically segregate the fat from the lean portion of a meat product including a photoelectric system for separating the two portions. Group 35-51. Reg. No. 8,733.

PAT. 2,388,823. Method of processing bacon. Patented Nov. 13, 1945.
A method of treating pork bellies for the manufacture of bacon, which comprises pressing skinned surfaces of the bellies together at a pressure from 50 to 150 pounds, curing the bellies, and then raising the temperature within a range from 110° to 150°F. Group 35-51. Reg. No. 8,734.

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Plant Food

PAT. 1,872,831. Device for controlling pressure of volatile liquids. Patented Aug. 23, 1932.
An apparatus to maintain a uniform pressure on liquefied normally gaseous materials whereby a uniform quantity of fluid may be withdrawn per unit of time. Group 36-13. Reg. No. 8,735.

PAT. 1,882,196. Device for measuring liquids. Patented Oct. 11, 1932.
A device for measuring under pressure liquids which are gaseous at ordinary temperatures and pressures. Group 36-13. Reg. No. 8,736.

PAT. 1,927,871. Sampling device. Patented Sept. 26, 1933.
An improved tool for taking samples of fertilizers and like material. Group 36-13. Reg. No. 8,737.

PAT. 1,941,499. Continuous automatically controlled absorption system. Patented Jan. 2, 1934.
An absorption system for use in absorbing anhydrous ammonia by superphosphate. Group 28-73. Reg. No. 8,738.

PAT. 1,973,439. Recovery of phosphates from minerals. Patented Sept. 11, 1934.
A method of separating silicious and phosphatic constituents from phosphate ore wherein oil is mixed with the fine material, and the mixture agitated under water to separate the constituents. Group 28-73. Reg. No. 8,739.

PAT. 1,989,175. Process for producing salts. Patented Jan. 29, 1935.
A process for producing salts from acids and anhydrous ammonia comprising partially neutralizing the acid and then spraying the acid and ammonia into a reaction chamber. Group 28-73. Reg. No. 8,740.

PAT. 1,996,547. Separator and method. Patented Apr. 2, 1935.
A separator and method for recovering phosphate minerals from water which comprises imparting a whirling motion to the mixture to separate the water from the solids. Group 35-63. Reg. No. 8,741.

PAT. 2,006,471. Separation apparatus. Patented July 2, 1935.
An under water screening apparatus for use in recovering phosphatic materials from sand. Group 35-69. Reg. No. 8,742.

PAT. 2,017,468. Method of producing phosphatic materials. Patented Oct. 15, 1935.
A process for separating phosphates from sand which comprises agglomerating the phosphate particles and separating the agglomerates from sand by under water screening. Group 28-73. Reg. No. 8,743.

PAT. 2,047,393. Fertilizer preparation. Patented July 14, 1936.
A process for producing fertilizer which comprises partially neutralizing an acid by the addition of alkali, spraying the partially neutralized acid and alkali into a chamber and simultaneously introducing therein solids in finely divided form. Group 28-73. Reg. No. 8,744.

PAT. 2,047,394. Mixing apparatus. Patented July 14, 1936.
An apparatus for preparing fertilizer including means for mixing the salt resulting from the interaction of the acid and alkali spray with the other solids. Group 28-73. Reg. No. 8,745.

PAT. 2,063,131. Fertilizer distributor. Patented Dec. 8, 1936.
A hydraulic distributing device for the distribution of commercial fertilizer by spraying. Group 35-61. Reg. No. 8,746.

PAT. 2,084,413. Flotation reagent. Patented June 22, 1937.
The method of concentrating phosphate rock which comprises treating phosphate bearing materials with tetra methyl ammonium hydroxide, a fatty acid and fuel oil, and thereafter concentrating the phosphatic constituents by flotation. Group 28-73. Reg. No. 8,747.

PAT. 2,113,727. Phosphate rock recovery. Patented Apr. 12, 1938.
The method of concentrating phosphatic fines, which comprises forming agglomerates of phosphatic fines, separating the agglomerates and subjecting the remaining pulp to a flotation operation. Group 28-73. Reg. No. 8,748.

PAT. 2,128,447. Reagent mixer. Patented Aug. 30, 1938.
A device for mixing reagents with phosphate rock feed including a cylinder with a rounded bottom.
Group 35-31. Reg. No. 8,749.

PAT. 2,140,172. Vibrating screen. Patented Dec. 13, 1938.
A spring loaded bearing support for a vibrating classifying screen. Group 35-69. Reg. No. 8,750.

PAT. 2,140,180. Classifier. Patented Dec. 13, 1938.
A classifying rake having a relatively long flat operating section and an improved link arrangement for operating the rake. Group 35-69. Reg. No. 8,751.

PAT. 2,158,169. Dewatering method. Patented May 16, 1939.
A process for dewatering a mixture of water and solids which consists in passing the mixture over a series of screens inclined in opposite directions and arranged one above the other with the inclination of the screens increasing from the first to the last of the series.
Group 35-33-69. Reg. No. 8,752.

PAT. 2,163,927. Separating apparatus. Patented June 27, 1939.
An underwater screening device for separating phosphatic materials from sand. Group 35-31.
Reg. No. 8,753.

PAT. 2,319,901. Vibrating screen. Patented May 25, 1943.
A classifying screen for the recovery of phosphate ore including sections of different slope and means for periodically submerging the screen in water.
Group 35-31-69. Reg. No. 8,754.

PAT. 2,322,189. Automatic knocker for fertilizer mixers. Patented June 15, 1943.
A mixing apparatus for fertilizer materials comprising a rotating drum and hammer means to prevent materials from stocking to the inside of the drum. Group 35-31. Reg. No. 8,755.

Refrigerator Cars and Motor Vehicles

PAT. 1,889,686. Refrigerator. Patented Nov. 29, 1932.
A refrigerator unit adapted for use in motor vehicles and equipped with compartment of lower temperature than the remaining space of the refrigerator. Group 35-84. Reg. No. 8,756.

PAT. 1,892,531. Ice and brine tank for refrigerator cars. Patented Dec. 27, 1932.
A special corrugated construction to strengthen the ice and brine tanks of refrigerator cars. Group 35-84.
Reg. No. 8,757.

PAT. 1,913,835. Tire carrier. Patented June 13, 1933.
Means for securing tires to trucks while such tires are not in actual use. Group 38-11. Reg. No. 8,758.

PAT. 1,922,067. Hatch cover. Patented Aug. 15, 1933.
A special hinge for hatch covers of refrigerator cars. Group 33-59. Reg. No. 8,759.

PAT. 2,202,954. Refrigeration unit. Patented June 4, 1940.
An improved refrigeration unit having an improved air cooling system for use in enclosures of various types, such as rooms, railway cars and automobile truck bodies. Group 35-84. Reg. No. 8,760.

PAT. 2,298,569. Refrigerated vehicle. Patented Oct. 13, 1942.
An improved air conditioner for use in transport vehicle bodies, such as trucks, railway cars and the like, in which a liquid medium is carried first in direct contact with a chilling medium and thence immediately across the current of treated air.
Group 35-84. Reg. No. 8,761.

PAT. 2,353,909. Truck refrigeration. Patented July 18, 1944.
Means for refrigerating motor trucks, railway cars, and like vehicles, comprising an improved refrigeration unit and means of dividing a truck body into a series of transverse compartments, each of which is supplied with sufficient chilled air to maintain the desired temperature. Group 35-84. Reg. No. 8,762.

Sausage and Table Ready Meats

PAT. 1,863,609. Meat mold. Patented June 21, 1932.
A meat mold for pressing a meat product into a rectangular shape containing springs on top and at both ends. Group 35-51. Reg. No. 8,763.

PAT. 1,942,994. Can cutting device. Patented Jan. 9, 1934.
An automatic paper can cutting device to be attached to a continuous spirally wound paper tube forming machine. Group 35-51. Reg. No. 8,764.

PAT. 1,945,584. Protective paints or lacquer for food containers. Patented Feb. 6, 1934.
A method of preparing protective lacquers for containers which comprises dissolving shellac and rosin in alcohol that has been denatured with shellac and rosin, removing the settlings and mixing pigment and oil with the solution. Group 28-11. Reg. No. 8,765.

PAT. 1,970,168. Meat cooker adjuster. Patented Aug. 14, 1934.
A spacer device for reducing the size of meat cookers comprising telescoping U-shaped members held apart by coil springs. Group 35-51. Reg. No. 8,766.

PAT. 1,983,681. Sausage treating method. Patented Dec. 11, 1934.
A method of packaging sausages to preserve their natual curvature and to provide for easy removal from the package to a smoke stick. Group 20-11. Reg. No. 8,767.

PAT. 1,984,435. Method of smoking frankfurters. Patented Dec. 18, 1934.
A method of treating frankfurters, which comprises subjecting the product to a dense heated smoke in a humid chamber and then drying the product in a smoke free circulating atmosphere to produce a tender casing relatively free of wrinkles. Group 20-11. Reg. No. 8,768.

PAT. 1,986,868. Treatment of meat. Patented Jan. 8, 1935.
A method of manufacturing a sausage specialty in which the product is first cooked in a predetermined shape and then introduced into a stretched casing whereby the casing contracts around the meat when released. Group 20-11. Reg. No. 8,769.

PAT. 2,034,747. Method of wrapping. Patented Mar. 24, 1936.
A method of wrapping meat which comprises placing a label on the meat, covering the label with Cellophane and then enclosing the product in a transparent casing. Group 20-11. Reg. No. 8,770.

PAT. 2,047,423. Apparatus for closing cans. Patented July 14, 1936.
A vacuum type can seamer including a vacuum chamber containing the seaming device and automatic means for delivering and discharging cans thereto. Group 35-51. Reg. No. 8,771.

PAT. 2,057,460. Apparatus for the treatment of meat. Patented Oct. 13, 1936.
An apparatus adapted for stuffing products, such as triangular shaped ham, in cellulose casings including a nozzle of resilient material with means for collapsing the walls of the nozzle inwardly to mount a casing on the nozzle. Group 35-51. Reg. No. 8,772.

PAT. 2,058,704. Can body and cover feeding mechanism. Patented Oct. 27, 1936.
An apparatus for controlling the feeding of can bodies and can covers to a turret type can heading mechanism. Group 35-51. Reg. No. 8,773.

PAT. 2,137,901. Sausage patty machine. Patented Nov. 22, 1938.
An attachment for a sausage patty machine including a paper platform and a receiving platform in cooperative arrangement with the forming horn. Group 35-51. Reg. No. 8,774.

PAT. 2,140,179. Carton packing fixture. Patented Dec. 13, 1938.
A rack with individual compartments for carrying a working supply of wrapping elements, a supply of product and a partially formed carton. Group 35-51. Reg. No. 8,775.

PAT. 2,163,920. Linking gauge. Patented June 27, 1939.
A sausage linking gauge, having adjustable aligned gauge members enabling the operator to measure and twist two individual links of sausage. Group 35-51. Reg. No. 8,776.

PAT. 2,168,693. Sausage linker. Patented Aug. 8, 1939.
An apparatus for stuffing sausage, comprising a stuffing nozzle with bearing surfaces to provide resistance to the slippage of casing material from the nozzle in the stuffing operation. Group 35-51. Reg. No. 8,777.

PAT. 2,182,181. Cutter. Patented Dec. 5, 1939.
A cutter secured to a sausage linking device for cutting off the ends of the stuffed casings. Group 35-51. Reg. No. 8,778.

PAT. 2,182,211. Preparation of sausage. Patented Dec. 5, 1939.
The method of preparing casingless sausage, which comprises extruding sausage meat through a heated stuffing horn, the heat coagulating the protein of the meat into thin crust which keeps the product together. Group 20-11. Reg. No. 8,779.

PAT. 2,190,432. Sausage treating apparatus. Patented Feb. 13, 1940.
An apparatus for treating skinless sausage by heating the formed sausage at a sufficiently high temperature to form a surface crust thereon but for such a short period of time as to prevent cooking the sausage. Group 35-51. Reg. No. 8,780.

PAT. 2,225,783. Sausage treatment. Patented Dec. 24, 1940.
A method of improving the organoleptic properties of meat which comprises inoculating comminuted meats with lacto-bacilli and permitting the lacto-bacilli to grow therein. Group 20-11. Reg. No. 8,781.

PAT. 2,238,549. Sausage cooker. Patented Apr. 15, 1941.
A sausage cooker having removable bars for supporting the sausage in a rack frame which may be raised or lowered in unison with the cover. Group 35-51. Reg. No. 8,782.

PAT. 2,262,238. Sausage preparation. Patented Nov. 11, 1941.
A method of curing dry sausage which comprises coating the uncured sausage with wax and maintaining the coated sausage at drying temperatures until cured. Group 20-11. Reg. No. 8,783.

PAT. 2, 282,666. Sausage linking. Patented May 12, 1942.
A method of arranging a continuous chain of links of sausage for mounting on a smoking support. Group 20-11. Reg. No. 8,784.

PAT. 2,299,946. Treatment of ham. Patented Oct. 27, 1942.
A method of preparing boneless cooked ham which comprises quick curing the ham, cooking, removing the bone and pressing. Group 20-11.
Reg. No. 8,785.

PAT. 2,311,610. Banding machine. Patented Feb. 16, 1943.
A banding machine designed to grasp a label and an article to be labeled within a deformable endless belt which is driven through a forming horn to apply the label. Group 35-51.
Reg. No. 8,786.

PAT. 2,321,624. Treatment of animal tissue. Patented June 15, 1943.
Natural casings are treated with an animal proteolytic enzyme under proper conditions of temperature and time to improve the physical properties, including tenderness. Group 20-11 Reg. No. 8,787.

PAT. 2,325,446. Sausage stuffing nozzle. Patented July 27, 1943.
A sausage stuffing nozzle containing nonresilient casing storage portion and a resilient discharge portion to provide resistance to the slippage of casing material passed from the nozzle in the stuffing operation. Group 35-51.
Reg. No. 8,788.

PAT. 2,326,082. Marking sausage. Patented Aug. 3, 1943.
A method of producing a marked stuffed sausage which comprises placing a strip of animal membrane imprinted with identifying indicia on the nozzle of a sausage stuffer, threading a natural casing over the nozzle, stuffing the casing with meat, and processing the stuffed sausage. Group 20-11. Reg. No. 8,789.

PAT. 2,373,865. Sausage stuffing machine. Patented Apr. 17, 1945.
A continuous sausage stuffing machine having means for constantly applying a relatively low pressure to a supply of comminuted meat and means for maintaining a reservoir of product to be stuffed under an increased pressure for extruding into a casing. Group 35-51.
Reg. No. 8,790.

PAT. 2,385,068. Method of dehydrating food concentrates. Patented Sept. 18, 1945.
A method of dehydrating food concentrates containing meat and cereal, comprising the steps of cooking, partially removing the water under vacuum, extruding the product, and completing the dehydrating. Group 20-11. Reg. No. 8,791.

Soap, Glycerine and Cleansers

PAT. 1,959,971. Container and method of making same. Patented May 22, 1934.
A container, particularly suitable for holding scouring cleansers, provided with fibrous ends secured to a fibrous wall with metal ferrules. Group 26-64.
Reg. No. 8,792.

PAT. 2,043,681. Drier conveyer. Patented June 9, 1936.
A device, and method, for drying tubes of soap material including a drier conveyer and means for extruding the material in a transverse series of strings on the conveyer. Group 35-62. Reg. No. 8,793.

PAT. 2,043,682. Extrusion device. Patented June 9, 1936.
An extrusion die for extruding semi-liquid material, such as soap, under hydraulic pressure comprising an orifice and a rotatable extrusion pin located centrally of the orifice. Group 35-59. Reg. No. 8,794.

PAT. 2,043,683. Tube expansion extrusion die. Patented June 9, 1936.
A die for extrusion of semi-liquid material in a tubular form, comprising an extrusion orifice and a spindle rotatable in said orifice terminating in an expansion bulb to expand the tube. Group 35-42. Reg. No. 8,795.

PAT. 2,043,684. Soap cutter. Patented June 9, 1936.
A device for cutting lengths of fragile tubular soap or other material into relatively small pieces in a continuous manner. Group 33-51. Reg. No. 8,796.

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PAT. 2,043,685. Method of making tube soap. Patented June 9, 1936.
Method of preparing readily soluble soap which comprises extruding liquid soap in the form of thin tubes, drying the tubes with heated air, and cutting the tubes into the desired lengths. Group 25-51. Reg. No. 8,797.

PAT. 2,043,686. Jacketed extrusion device. Patented June 9, 1936.
An extrusion die, having a water jacket around the nozzle to impart heat thereto, whereby a tubular product, such as soap, issues with a glossy finish. Group 35-42. Reg. No. 8,798.

PAT. 2,060,542. Metal ferrule. Patented Nov. 10, 1936.
A metal strip provided along one edge with teeth adapted for securing a fiber disc to a fiber walled container. Group 33-41. Reg. No. 8,799.

PAT. 2,060,863. Method of forming knock-out plugs. Patented Nov. 17, 1936.
A method of forming removable opening plugs in a fibrous body which comprises shearing plugs from the fibrous body in a special manner to completely sever all of the fibers without removing the plugs from the openings. Group 33-51. Reg. No. 8,800.

PAT. 2,085,840. Method of treating soap. Patented July 6, 1937.
A method which comprises extruding plastic soap in the form of thin tubes and applying heat to the outer surface of the tubes to provide a glossy finish. Group 28-41. Reg. No. 8,801.

PAT. 2,102,866. Chilling device. Patented Dec. 21, 1937.
A device for chilling hot soap including a shell and a rotatable drum in the shell, and scrapers which direct the fluid introduced into the drum in the direction of rotation of the drum. Group 35-59. Reg. No. 8,802.

PAT. 2,108,910. Method of preparing fiber containers. Patented Feb. 22, 1938.
A method of treating fiber containers provided with marginal end rolls, which comprises applying to the marginal end rolls a bead of plastic material which is hard and elastic at temperatures of approximately 185°F. Group 26-64. Reg. No. 8,803.

PAT. 2,109,601. Container ferrule. Patented Mar. 1, 1938.
A metal ferrule for a fiber end container comprising a strip of metal which is provided on both edges with teeth. Group 26-64. Reg. No. 8,804.

PAT. 2,110,750. Preparation of containers. Patented Mar. 8, 1938.
A method of treating fiber containers provided with marginal end flanges, which comprises applying to the flange a bead of plastic material which is hard and elastic at a temperature of approximately 185°F. Group 26-64. Reg. No. 8,805.

PAT. 2,119,730. Container and method of making same. Patented June 7, 1938.
A container for cleansers, and method of making, having a fibrous end and a metal ferrule provided with teeth clenched internally of the fibrous portion. Group 26-64. Reg. No. 8,806.

PAT. 2,124,722. Applicator. Patented July 26, 1938.
An apparatus for applying a film of congealable material to the ends of a tubular body, such as fiber can bodies, prior to the application of the ends. Group 26-64. Reg. No. 8,807.

PAT. 2,140,177. Container. Patented Dec. 13, 1938.
An improved fibrous container, having reinforced end edges sealed against capillary attraction of moisture by plastic material. Group 26-64. Reg. No. 8,808.

PAT. 2,158,165. Paper can. Patented May 16, 1939.
A metal ferrule for securing fibrous end closures to fibrous container bodies comprising a flanged band having an interlocked seam at its central portion. Group 26-64. Reg. No. 8,809.

PAT. 2,158,166. Container sealing method. Patented May 16, 1939.
A method of applying coating material to the ends of container bodies involving the step of rotating the container while in contact with a moving film of coating material. Group 26-64. Reg. No. 8,810.

PAT. 2,163,926. Means for applying metal ferrules to fiber containers. Patented June 27, 1939.
A device for applying a cupped fibrous end to a tubular fibrous body involving the crimping of a metallic ferrule which is provided with a flange to the outer wall of the tubular body. Groups 26-64; 35-12-33. Reg. No. 8,811.

PAT. 2,202,972. Container cover. Patented June 4, 1940.
A container cover composed of a single unit comprising a fiber disc and a metallic ring, and adapted for handling in a can closing machine. Group 26-64. Reg. No. 8,812.

PAT. 2,202,973. Soap product. Patented June 4, 1940.
A tubular soap product of small diameter and thin walls which is readily soluble in water. Group 28-41. Reg. No. 8,813.

PAT. 2,202,974. Ribbon soap. Patented June 4, 1940.
A ribbon soap in which the component particles are collapsed tubes with a continuous smooth surface. Group 28-41. Reg. No. 8,814.

PAT. 2,299,958. Soap apparatus. Patented Oct. 27, 1942.
Method and means for extruding and drying plastic material, such as soap. A series of substantially parallel strands of the material are placed on a moving conveyer transversely of the path of movement of the conveyer and the strands dried. Group 28-41. Reg. No. 8,815.

PAT. 2,358,278. Strip forming means. Patented Sept. 12, 1944.
A die forming machine for forming metal strips into circular bands and for pressing the bands to provide them with a flared portion around one rim. Group 33-12. Reg. No. 8,816.

PAT. 2,382,764. Recovery of poly-glycerol resin. Patented Aug. 14, 1945.
Poly-glycerol resins are recovered from the residues of glycerol stills by injecting steam into the molten residue, precipitating the impurities from the aqueous solution and extracting the poly-glycerol resin from the residual salt cake. Group 28-83. Reg. No. 8,817.

PAT. 2,385,075. Detergent composition. Patented Sept. 18, 1945.
A non-caking cleanser, and method of making the same, containing powdered silica and dispersed powdered calcium silicate to prevent caking. Group 28-89. Reg. No. 8,818.

PAT. 2,385,322. Soap molding machine. Patented Sept. 18, 1945.
A machine for continuously casting soap into stick form and for cutting the sticks into bars of soap. Group 33-59. Reg. No. 8,819.

PAT. 2,411,443. Manufacture of soap. Patented Nov. 19, 1946.
A method of stabilizing soap wherein stannic borate is incorporated in the soap to retard deterioration and color formation. Group 28-41. Reg. No. 8,820.

Miscellaneous

PAT. 1,926,369. Peanut butter. Patented Sept. 12, 1933.
Mono and diglycerides are added to peanut butter to maintain the mass homogeneous. Group 20-99. Reg. No. 8,821.

PAT. 1,950,104. Box. Patented Mar. 6, 1934.
A paper box which may be formed from a blank and folded to have a cover with either gabled or flat shape. Group 26-69. Reg. No. 8,822.

PAT. 1,967,071. Ceiling construction. Patented July 17, 1934.
An insulating structure comprising cork and concrete slabs secured together by a corkscrew shape tying member. Group 32-71. Reg. No. 8,823.

PAT. 2,083,970. Pipe joint. Patented June 15, 1937.
A pivotal pipe joint of unidirectional type comprising a pair of inlet and outlet casings and a bushing therebetween to permit rotation. Group 35-86. Reg. No. 8,824.

PAT. 2,095,764. Container. Patented Oct. 12, 1937.
A container formed from a single piece of fiber board in which the end flaps are so constructed that they will hold the formed container firmly and securely without bulging and in a manner to prevent crushing. Group 26-69. Reg. No. 8,825.

PAT. 2,108,929. Package paster. Patented Feb. 22, 1938.
A device for applying paste including a reservoir and a special paste feeding valve for applying the paste to a stack of sheets of paper. Group 35-59. Reg. No. 8,826.

PAT. 2,118,923. Rolling pin scraper. Patented May 31, 1938.
A device for cleaning the outer surfaces of cylinders, such as rolling pins, including a handle provided with two diverging prongs forming a fork and a scraping element adapted to readily conform to a convex surface. Group 35-59. Reg. No. 8,827.

PAT. 2,155,746. Marking carcasses. Patented Apr. 25, 1939.
An improved branding tag comprising a brand plate having prongs provided with notches for imbedding the prongs below the meat surface. Group 38-59. Reg. No. 8,828.

PAT. 2,158,118. Container. Patented May 16, 1939.
A container provided with an outer wrapper of cellulosic material which is cut to encase the outer wall of the container and to provide end edges for overlapping the ends of the container. Group 26-64. Reg. No. 8,829.

PAT. 2,176,122. Pasting device. Patented Oct. 17, 1939.
A pasting device comprising a paste roller, a ledge at one end of the roller and a flap folding baffle mounted in cooperative relation with the ledge. Group 35-89. Reg. No. 8,830.

PAT. 2,182,182. Tying fixture. Patented Dec. 5, 1939.
A tie string is formed into a pair of spaced loops, the loops are passed over the ends and around the body of the article to be tied and are drawn tight at the knots by pulling on the loose ends of the string. Group 35-59. Reg. No. 8,831.

PAT. 2,182,189. Attachment for carton stitching machines. Patented Dec. 5, 1939.
An attachment for use with stitching machines comprising a track and a carton end blank holding ledge extending forwardly from the track in substantially parallel relationship with an anvil. Group 35-59. Reg. No. 8,832.

PAT. 2,199,485. Food storage. Patented May 7, 1940.
An apparatus and method for the control of moisture in refrigerated chambers involving the introduction of water in the form of a fine mist at selected points within the chamber. Group 35-84. Reg. No. 8,833.

PAT. 2,204,703. Treatment of wastes. Patented June 18, 1940.
Packing house sewage material is treated with a reagent, such as ferric chloride, at a definite pH to coagulate protein material. Group 28-34. Reg. No. 8,834.

PAT. 2,218,232. Splitting device. Patented Oct. 15, 1940.
An attachment for bag making machines, to periodically split continuously fed webbed material lengthwise of the material. Group 35-59. Reg. No. 8,835.

PAT. 2,241,030. Treatment of curing pickle. Patented May 6, 1941.
A method of treating used curing pickle to remove its porky flavor and improve the flavor that it imparts to meat, which comprises aerating the pickle under conditions such as to precipitate proteins and form oxidation products of desirable flavor. Group 20-11. Reg. No. 8,836.

PAT. 2,268,173. Carcass refrigeration. Patented Oct. 7, 1941.
A device for selective refrigeration of specific portions of a carcass, which comprises a vessel for a refrigerant and a perforated hollow needle attached thereto for discharging the refrigerant. Group 35-64. Reg. No. 8,837.

PAT. 2,270,580. Carton. Patented Jan. 20, 1942.
A foldable display carton with high rear wall and low end and front walls so that when the top is folded back the product is displayed above the walls. Group 26-61. Reg. No. 8,838.

PAT. 2,277,718. Sludge treatment. Patented Mar. 31, 1942.
A method of concentrating sludge, which comprises fermenting the sludge sufficiently to form gas therein, but insufficiently to digest the sludge, and then heating the fermented sludge to form a substantially dewatered sludge. Group 28-34. Reg. No. 8,839.

PAT. 2,292,028. Ceiling construction. Patented Aug. 4, 1942.
A tying member for affixing an insulating member to building walls, comprising a U-shaped pin with flared walls. Group 32-71. Reg. No. 8,840.

PAT. 2,303,796. Carton. Patented Dec. 1, 1942.
A carton formed from a single blank of cardboard in which flaps integral with the bottom and side walls are adapted to interfold and interlock to form the end walls of the carton. Group 26-61. Reg. No. 8,841.

PAT. 2,328,361. Method of conditioning sludge. Patented Aug. 31, 1943.
A method of recovering the protein bearing material from sludge, which comprises coagulating the protein by heating the sludge and adding a water soluble salt of calcium and then separating the coagulated protein material. Group 28-34. Reg. No. 8,842.

PAT. 2,366,683. Preparation of organic mercuric nitrate. Patented Jan. 2, 1945.
A method of preparing phenyl mercuric nitrate, which comprises reacting mercury diphenyl with mercuric nitrate in a solution of acetone, water and nitric acid. Group 28-89. Reg. No. 8,843.

PAT. 2,414,303. Recovery of cysteine. Patented Jan. 14, 1947.
A method of recovering cysteine from keratin comprising hydrolyzing the keratin in hydrochloric acid, converting the cysteine hydrochloride to the mercaptide and recovering the cysteine from the mercaptide. Group 28-89. Reg. No. 8,844.

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